

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Cleanings in Bee Culture



An Italian Apiary, belonging to Signor J. Rinaldo, at Bagadali.

The A. I. Root Co., Medina, O., U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXV

November 15, 1907

No. 22

HONEY PACKAGES

OUR CASES are the non-drip "Root Quality" kind. Also can supply you with glass and tin packages for extracted honey.

BUY NOW
FOR NEXT YEAR
and get four and one-half

per cent cash discount for cash orders in November. We will quote you prices on the goods you will need for next season. Get your goods ready through the winter before the rush in the spring. **Q** We carry the Danzenbaker Hive, the Comb-honey Hive.

M. H. HUNT & SON
REDFORD, ~ ~ MICHIGAN

GREAT FIRE SALE

On account of a recent fire which slightly damaged our stock of goods, we are closing out all

POULTRY AND BEE SUPPLIES
AT A 10 PER CENT DISCOUNT.

It will pay you to order any supplies which you will need for next season's use. Make up your order and deduct 10 per cent. Goods guaranteed to be as good as new, except hives are discolored on outside. Don't delay, as they are going fast. Will exchange supplies for honey and wax

The Griggs Bros. & Nichols Co.
523 Monroe St., Toledo, O.

BIENZENZÜCHTER !

von Deutschland, Schweiz, Oesterreich,
u. s. w., senden Sie fuer unsere
1907 Preisliste von

Bienenwohnungen, Rauchapparaten
Honigschleudern, Handschuhen,
Bienenschleiern, Walzwerken,
Futterapparaten,
Porter's Bienenflucht,
Fluglochschiebern für Kasten,
Königinnenabsperrgittern,
Weiselkäfigen,
Schwarmfangbeuteln,
Entdeckungsmessern,
Dampfwachsschmelzern,
Wabenentdeckungsaappa-
raten, und allen anderen
Bienengerätschaften der

A. I. ROOT COMPANY

Grösste Fabrik ihres gleichen in der Welt

EMILE BONDONNEAU

General Vertreter für Europa und Kolonien
142 Faubourg Saint Denis, Paris, 10me.

GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. Root, Editor A. L. Boyden, Advertising Mgr.
H. H. Root, Asst. Ed. J. T. Calvert, Business Mgr
A. I. Root, Editor of Home Department

Vol. XXXV.

NOVEMBER 15, 1907.

No. 22



THE *Irish Bee Journal*, p. 56, says that 2 oz. of saltpeter to a gallon of water is the right strength for paper fuel. Guess it would be all right for saltpeter rags too.

E. BOHM had a number of drone-laying queens sent to him, of which 25 per cent were unfertilized. All the remainder had diseased intestines, and to this he attributes their defective laying.—*Leipz. Bztg.*, p. 151.

YELLOW sweet clover may succeed in Florida, but I may remind W. K. M., page 1372, that the late Mrs. L. Harrison could not succeed in getting white sweet clover to grow there. [I have also failed so far to get even a single plant, doctor.—A. I. R.]

"YON YONSON," that interesting Swede Sucker, has gone from Illinois to New Mexico, and, according to his report, in which I have entire confidence, if I were looking for a new location as a bee-keeper I would visit his locality before settling down. Alfalfa, sowed May 5, bloomed in 65 days, and yielded 3 crops. Where alfalfa acts in that way bees ought to find employment.

SOME ONE, I can not now recall who, goes Mr. Alexander one better in his plan of extracting from the brood-chamber in the spring, p. 1377, by taking combs of honey out of the brood-chamber, replacing them with empty combs, setting the full combs to one side of the apiary for the bees to rob out, then taking the honey away to be robbed over and over again. Saves all the bother of extracting.

MR. EDITOR, you are breeding trouble for me by saying, p. 1368, "Better keep on breeding those 'hornets.'" I've had a hard fight

with my assistant to get in any other blood; and now that you are giving aid and comfort to the enemy, it will be worse than ever. [Nothing would suit me better than to get into an argument with your assistant; and for the sake of argument I may have to take the other side of the proposition. Yes, sir; I think that, if you had started with perfectly pure stock, you would have had as good strong gatherers as you now have.—ED.]

HERK MUCH reports in *Leipz. Bztg.*, 152, that 60 to 80 per cent of the young queens of American goldens are lost on their wedding-flight. He thinks the chief reason was that their bright color especially attracted the attention of the birds. [There may be something in this; and for that reason nature has provided that most races of bees, and especially the honey-bees, shall be of a somber color. A bright golden yellow is very striking, and certainly would attract birds; but when man steps into the problem he disregards the principle of the survival of the fittest in nature by making his queens a bright yellow.—ED.]

FERD. C. ROSS sends me a sample of his honey, and another sample that is poorer, the latter being taken from a bottle containing 15 ounces, and of which the grocer sells lots at 25 cents a bottle, and he thinks that at that rate a section of 15 ounces ought to bring more than 25 cents. Sure; and if the two are put fair and square before the people there ought to be no doubt about it. It's up to the bee-keeper himself; and if he persistently keeps his sections on show, in the best possible shape, there is little doubt as to the final outcome. But if bee-keepers don't ask a fair price they're not likely to get it.

EDITOR DIGGES, of the *Irish Bee Journal*, pokes fun at "Bee Expert," who tells us that "a hive is sometimes in its most amiable mood, and at other times shows temper, and that a hive with no stores is exceedingly difficult to handle." Now, that's just like a hide-bound Irishman to insist on exactness of language. Over here we have people who favor calling a colony of bees a hive, a swarm, a stand, or

any other old name that happens to come handy. To write so that people can always tell exactly what you mean by what you say is monotonous. To have half a dozen names for the same thing, and to use the same name for half a dozen different things, gives variety, keeps the readers guessing, and allows each reader to understand a thing his own way. No wonder the *Irish Bee Journal* is dull with such a narrow-minded editor. [While you are digging at Editor Digges, we are wondering if you are not digging at another editor for allowing in his columns such a variety of words to express the same thing to avoid tautology. If you are, just speak right out.—Ed.]

REPLYING to your inquiry, Mr. Editor, p. 1384, sweet clover begins blooming earlier than cucumbers, and continues later. But this year a large part of my surplus was other than white clover, sweet clover, or cucumber. It was whiter than either. I think it was from heartsease. I say that hesitatingly for fear of being laughed at, for I have always supposed that heartsease honey was amber, but there was no amber about this. It was the most beautifully white honey I ever had. A fall flow of white honey is a new thing here, but I could find nothing but heartsease to charge it up to. The bees worked busily on that, and carried into the hive abundance of pollen that looked exactly like what they gathered on the heartsease. [Is there anybody else among our subscribers who is able to report beyond doubt that heartsease honey may be light-colored? We are of the opinion that there have been reports to that effect.—Ed.]

JUST BEEN reading what a bee State California is, p. 1374. Mr. Editor, please change my address to California.

Later.—I note that only about one year in five is favorable for honey in California, p. 1370. Please continue my address in Illinois. [No. While California can make the greatest showing for honey of any State in the Union, it does not offer any great inducement to the honey-producer. We believe we are not overstating the fact when we say there is only one fair year there in three, and only one good one in five. The bee-keeper, therefore, finds it a problem to keep bees there over the two or three bad years until a good one comes. When we were in that State in 1901, which was an exceedingly good year, we were shown yard after yard that had been practically neglected because the owners had become discouraged, and the bees starved or died from disease. It is only the stayers who are able to make a fair living.—Ed.]

LOCALITIES differ. While the plan of extracting in spring from the brood-chamber, as given by Mr. Alexander, p. 1376, may be the very best thing for him, and while sealed combs of honey might hinder the spreading of the brood-nest, I do not believe they would work so in general—certainly not here. Of course, it is possible to fill the brood-chamber with sealed comb so full that there is no

room for brood. But added as they are needed I think my bees uncap them as fast as they need the room. If the brood-nest keeps expanding so that there is all the brood the bees can cover, what more can you ask? At the beginning of last season, on coming to No. 211 my assistant said, "There is too much honey in this hive; the queen will not have room to lay." It was the only colony in the apiary accused of having too much sealed honey. At the close of the harvest it had stored more surplus than any other. I do not say that the combs of sealed honey were the cause of the extra yield, but I do say that they did not prevent it. [This is a very fruitful theme for discussion, and we should like to hear from others of our subscribers. Mr. Alexander finds it pays to extract and feed back. If one practice pays well in one locality, and another gives better results in another—well, let us have the thing discussed, and at the same time let the surrounding conditions of locality be given in order that others may be guided.—Ed.]



ON the Santa Barbara national forest there are 40 apiaries having permits from the government Forest Service. There are 15 apiaries on the other reserves in California.

THE special clause of the national pure-food law relating to the correct labeling of all food products is now in active force, the period of probation having expired October 1. The Board of Food and Drug Inspection decided some time ago that a further extension of time could not be granted, and all foods must now possess a truthful label, if there is any label at all. It is necessary now, if a label is applied, that it tell the exact truth in such a way as not to mislead any one who intends to buy. W. K. M.

ACCORDING to some of our exchanges the raising of clover for its seed is rapidly becoming a recognized industry of the Willamette Valley, in Oregon. At Albany, for example, 200,000 lbs. of seed were shipped out this season. The price obtained for seed is said to be about 10 cents per lb., but the growers think they ought to get more for that which is entirely pure, and unmixed with weed seeds. They say there is not enough difference between weedy seed and that which is pure, and that is probably true. The bee-keepers will want to be on hand when this clover seed is being produced. W. K. M.

SOME of the large grocery firms are still putting on the market a mixture of glucose and cane syrup which they term "California Honey Drips." As this mixture has no connection with California honey we respectfully call the attention of the National Board of Food and Drug Inspection to this misleading label. In the mean time bee-keepers whose trade is affected by this cheap substitute should protest to the proper authorities in each State where it is sold. The public will in time learn that California honey is not a mixture of glucose and cane syrup—the former predominating. W. K. M.

ON the Pacific coast there has been an enormous number of eucalyptus-trees planted during the past year, and one of the nurseries actually asks its patrons not to order more than 20,000 trees at a time. Millions have been planted, under the idea that there is money in it. Some are afraid that the honey from this source will be too strong in taste; but these trees have been grown for many years without any complaint. A few varieties may produce a strong-flavored nectar; but these do not seem to be common in California. In any case a strong-flavored honey will suit the baking trade.

W. K. M.

OUR good friend Herr Emil Schenk, of Taquary, Rio Grande do Sul, Brazil, has kindly sent us a copy of his book on bee-keeping (*Bienenzucht*), which has just been published by the Agricultural Department of Rio Grande do Sul. It is written in the German language, because that section of Brazil was largely settled by people from the "fatherland," and hence the principal bee-keepers are German-speaking. The bulletin is nicely illustrated with some good pictures, and no doubt it will be of considerable benefit to that country. Mr. Schenk is editor of the Brazilian bee-journal (*Bienenpflege*, published at Port Alegre), so that he is quite capable of giving good advice. He gets assistance from Heinemann, the inventor of the queen-excluder. W. K. M.

FIGHTING, ROBBING, OR ENTANGLEMENT?

ON page 1154, Sept. 1, Mr. H. W. Doerr, of Beardstown, Ill., presented a case which we diagnosed as robbing; but Mr. Doerr comes back at us and insists that we were wrong, and in proof encloses a letter from Mr. Fred H. May, of Meredosia, Ill., stating that he has found a similar condition among his bees; and on close examination he found that, while they appeared to be fighting in front of the entrance, they were really entangled in the stamens and pollen of certain flowers; that these stamens and pollen were of a sticky nature, and, adhering to the bees, they were met by their fellows at the entrance, when a mutual effort was made to remove the offending substance, and that their actions looked very much like fighting; but, so far from doing that, the bees all belonged to one hive, the one lot trying to free the other

from the entanglements of the sticky pollen and stamens.

Milkweed, it is well known, will cause trouble of this nature, and Mr. Fred H. May found a similar difficulty from horsemint, or sandmint as it is called in his locality. Mr. Doerr says he is satisfied that Mr. May has given the correct diagnosis, and desires us to correct the statement, which we are pleased to do.

COLORADO HONEY PRACTICALLY ALL SOLD OUT FROM COLORADO.

WE learn from what we believe to be good authority that practically all of the large lots of Colorado honey have been sold and are now in the Eastern markets. As this honey finds a ready sale almost anywhere we may conclude there will not be much of it left after the holidays. We informed our readers in our last issue that practically all of the California honey was sold out. All that will be available, probably, from now on will be Eastern honey; and as the crop of that was short we may see, instead of a decline in the price of honey along about the holidays, an actual increase. It would not be at all surprising. The national pure-food law, as well as the rigid State laws, has put the glucose concoctions where they can not compete—that is, they can not masquerade under the name of California, Colorado, clover, or farm honey.

Our own experience shows that we never had so much difficulty in buying a little honey to supply our own local trade as we have had this year. Several times when we thought we had snapped up a fine lot we found that some one had got ahead of us and bought it.

THE IMPORTATION OF BUMBLE-BEES FROM THE UNITED STATES INTO THE PHILIPPINES.

THERE have been numerous items in the newspapers to the effect that the United States Department of Agriculture was sending consignments of bumble-bees to the Philippines. Not daring to trust to newspaper reports we addressed a letter to Dr. E. F. Phillips, of the Bureau of Entomology, requesting that, if he were unable to give us authentic information on the subject, he turn our letter over to the proper official in the Department. This he did, and the following reply from Mr. Webster, in Charge of Cereal and Forage-plant Insect Investigations gives us the facts.

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF ENTOMOLOGY, Washington, D. C.

Gentlemen:—Your letter of October 14, addressed to Dr. E. F. Phillips, has been referred to me for reply.

The newspaper clipping which you enclose is very much of the same nature as newspaper clippings in general. The facts relative to the exportation of bumble-bees to Manila are simply these: Some months ago, probably during last winter, a request was received from some agricultural investigators in the Philippines asking the Bureau to endeavor to send them some of our native bumble-bees for the purpose of fertilizing clover in that country. Dr. Phillips last spring undertook to send them some bumble-bees by mail, shipping them in the manner in which queen-bees are usually sent; but, owing to their wild nature,

they did not take kindly to this sort of usage, and all of them died in transit. The experiment was simply discontinued until this fall, when the whole matter was turned over to me. We had arranged to send another consignment, but were waiting until the proper season, and the Philippine government was evidently getting impatient, and cabled the request that gave rise to the newspaper clipping that you enclosed.

On the government transport sailing from San Francisco November 5 there will go a second consignment, this time packed in small refrigerator baskets, and in the care of two Philippine government students who are returning home from the United States. The bees are being collected by one of my assistants, Mr. W. J. Phillips, in the vicinity of Richmond, Ind.; and as soon as they are taken they are at once placed in cold storage, and will be kept in a dormant condition until they are placed on board the transport by the two students having them in charge. They will then be put in the refrigerator of the transport, with the result that they have been put to sleep in Indiana and will wake up in Manila. Just what they will do over there remains to be seen; but the expectation is that they will fertilize the common red clover which the government is introducing into those islands. The transportation is being carried out by this Bureau in cooperation with the Bureau of Insular Affairs of the War Department.

F. M. WEBSTER.

In Charge of Cereal and Forage-plant
Insect Investigations.

Oct. 22.

VENTILATORS FOR BEE-CELLARS — WHERE SHALL THEY BE PLACED?

A SUBSCRIBER asks where the ventilator to a bee-cellar should be placed — at the top or bottom; that is, should it open near the ceiling or near the floor? This is a hard question to answer, as a good deal depends on conditions. If the temperature can be kept very near 45, no higher than 47, and not lower than 43, very little ventilation except what can percolate through the doors and walls will be needed. But if the temperature is likely to vary considerably, and especially if it goes too high, the cellar should have means for ventilation. The ideal plan is to run an eight or ten inch sewer-pipe, with the joints well cemented to keep out wet, 100 feet from the cellar, and on a level with the cellar bottom. One end is to open up near the ceiling of the cellar. The other end should connect with a perpendicular shaft projecting above ground outdoors. The passage of the air down through the ground warms it so that it is not so chilling when it arrives at the cellar. At a point remote from the inlet there should be an outlet, the pipe coming down close to the floor, communicating with a chimney.

While the sub-earth ventilator is ideal providing it is dry from end to end, it is not absolutely essential. Fresh air may be brought in to an outer cellar, warmed, and then conducted into the cellar where the bees are. Where this is not practicable the cellar-door may be left open at night when too warm, to let air in that way; but it should be closed before morning.

If the cellar becomes too cold, say below 40, it should be warmed, either by opening the door into the furnace-room or by means of a little stove connected with a chimney. But never use a coal-oil stove, as it consumes too much of the oxygen of the air, rendering the atmosphere more impure.

But care should be taken, during the process of ventilating, not to make the cellar too cool nor too warm — not higher than 50

nor lower than 40. During a very warm spell the outside atmosphere may be very much warmer than that of the cellar. The ventilator should then be used only at night.

To answer our subscriber's question more definitely we may say that the location of the fresh-air ventilator, either at the top or bottom, is not so very important. But the problem may be how to get a circulation, even with the ventilator wide open. It may then be necessary, even when not too cold, to build a little fire in the stove so that the draft up the chimney will draw out the foul air; or, better still, an electric fan in front of the inlet will be found very serviceable providing the premises are equipped with an electric current. But when this can not be obtained it has occurred to us that a good mechanic might rig up a clockwork that would run a small fan for two or three hours after winding it up with heavy weights. This ought to furnish air enough to last three or four hours.

As we said at the outset, if the temperature can be controlled within three or four degrees, and held there, very little ventilation will be required, providing, of course, that the cellar is not hermetically sealed. Usually enough air will come through the walls and doorway and windows to give the bees all the air they require if the temperature can be kept at 45, where they will go into that quiescent sleep that nearly approaches hibernation. At that temperature respiration is very low and the consumption of stores light. Above a temperature of 50° the bees become active and consume the oxygen in the air, when they become uneasy. In such cellars there must be an abundance of ventilation or there will be trouble.

THE NATIONAL BEE KEEPERS' CONVENTION AT HARRISBURG, OCTOBER 29, 30.

WHILE the attendance was not large (as it has been a poor year with bee-keepers generally), the general interest in and the character of the discussions were of the very best. No program had been announced, as the secretary, Mr. J. A. Green, owing to a pressure of other duties, was unable to get any program ready; but President Aspinwall, during the last week, secured a number of valuable papers which were read before the convention, and in all, except one case, by the author himself.

Prof. H. A. Surface, Economic State Zoologist, of Harrisburg, gave the address of welcome to the city, and before closing referred to the benefits derived from membership in the Association. Some, he said, complained because they had never gotten any thing out of the organization. The trouble was, too many expected a direct benefit to themselves. As in the case of fire insurance, perhaps only one man out of a large number would get back his money, and yet no one would think of going without insurance. He urged that every one become a member of the National, not only for the direct benefit he might or might not secure, but be-

cause of the great good to the industry as a whole

At this time he referred to the fact that Professor Martin, of the Division of Farmers' Institutes of Pennsylvania, had expressed a willingness to make bee-keeping a subject for discussion at the institutes. Soon after, the gentleman himself came into the room, when he was introduced by Professor Surface. The former showed that he was interested in bee culture by stating that he had requested the State Bee-keepers' Association to name persons who would be able to give talks on bees before the farmers; that the State had already eight speakers who took up the general subject of bee culture at the institutes. So far as the Division of Farmers' Institutes of Pennsylvania was concerned, it was glad to join with the National Bee-keepers' Association and the State Bee-keepers' Association in making bee culture more prominent than ever.

BEES AND HORTICULTURE.

This subject was handled by Prof. H. A. Surface in a most admirable manner. Instead of taking up the old hackneyed line of discussion as to whether bees benefited the orchardist in helping to pollenate the blossoms of the fruit-trees, he preferred to take up an entirely different line of thought; but before doing so he took occasion to state that the fruit-men generally agreed that the bees performed a very valuable service in pollinating their trees in the spring of the year, and that many of them now were inviting bee-keepers to plant a few hives in their orchards. But the line of discussion that he would take up he put under three heads—1. "The relation of bees to the ripe fruit;" 2. "Do bees scatter the pear-blight among the pear-orchards?" 3. "Does spraying the trees kill bees?" Under point No. 1 he had conducted a number of experiments, among which was putting a plate of plums on top of a strong colony; two of the plums were sound, but soft and ripe; two slightly punctured, and two partly rotted. After two months' time he took the fruit off the hive and brought it into the convention room. An examination showed that the rotted and broken fruit had been eaten by the bees to an extent that the soft pulpy portion had been considerably reduced. The sound fruit showed no injury whatever, and simply dried. He gave this as an instance to show that, if bees could have cut through the skin of the sound fruit they would have done so, as they had in the case of the partly rotted and broken fruit. In addition, he could see no evidence that bees had ever punctured the fruit on the trees, although we must admit, he said, that fruit cut or broken by insects or birds would be visited by the bees, and sometimes to an extent that would cause complaint on the part of the orchardist.

Point No. 2. "Do bees carry pear-blight?" He thought they might do so, but he was certain that there were other agencies that would scatter the blight. It was his opinion that, if all the bees were removed from the

vicinity of the orchard, the blight would continue as before.

Third point, "Does spraying kill the bees?" He thought altogether too much ado had been made about this alleged destruction. In the first place, the intelligent and up-to-date orchardist does not now spray (because he knows better) during the time that trees are in bloom. He went on to show that, while they were in full flower, the spraying mixtures were very destructive to the blossoms. In the second place, many of them were entirely harmless to the bees, and, even if they were applied during the blooming time, no harm could come. He admitted, however, that certain of the arsenical poisons would kill the bees; but as these were not applied during blooming time they would do no damage. Lime-sulphur wash, which is now used to a very great extent in the treatment of the San José scale, would not kill bees. This liquid he had repeatedly sprayed upon the hives and bushes near them, but in no case were any bees killed. But where the fluid was thrown directly on to the bees it might and probably would destroy them.

At the close of this excellent address Mr. Hershiser wished to put Professor Surface more strongly on record. As the report was being taken down in shorthand, and would be quoted largely, he wished to know what Professor Surface had to say about the bees as pollinators of orchards. Professor Surface thought there could be no question on that point. They were of immense benefit to the fruit-men. While they were not valuable alike to all kinds of fruit, there were certain kinds where they performed a very essential service.

Mr. Holtermann then brought out the point that large numbers of bees were often killed because they would appropriate the poisonous spraying-liquids, even when the trees were sprayed out of bloom. He gave as a reason for this that many bee-keepers were short-sighted enough not to place in the bee-yard plenty of water where bees could easily get it without going any great distance. Professor Surface admitted that, where they did not have enough water to carry on brood-rearing, there might be some losses in this way.

In the general discussion that followed, it was very clearly shown that bees need a great deal of water, and, further, it is not sufficient that they can get water half a mile or a mile away—they ought to have it close to the hives; and it should be there continuously while the bees can fly, as, whenever short of water, they will always go to these watering places.

Some one asked if a running stream passing through the apiary would be sufficient. Mr. Holtermann replied that it ought to be still water, and even went so far as to say it should be stagnant; but to this several demurred. Some even went so far as to place warm water where the bees could get to it, especially in the colder weather.

In referring to the value of bees as pollen-

ators, Mr. France referred to one A. D. Barnes, one of the most extensive fruit-growers of Wisconsin, who offered to furnish room and a building at each one of his orchards to a bee-man who would put a few hives in the vicinity of the trees. He stated that a large number of fruit men were beginning to find that it was to their distinct advantage to do this.

PLURALITY OF QUEENS.

At this point a very valuable and suggestive paper was read from Mr. E. W. Alexander, of New York. It was brief and to the point, calculated to draw out discussion, which it did in a most admirable manner. He spoke of the advantages of the plurality of queens in a hive; that we had already made a good start toward the successful handling of them. One could thus keep a good supply of queens on hand, secure strong colonies, and supersede at any time.

He also referred to the advantage of uncapping the combs and feeding honey back again to the brood-nest in the spring, for the purpose of stimulating brood-rearing. But this question he has already covered in these columns, and we will not attempt to give his line of argument at this time.

He had tried a gasoline-engine for running a large eight-frame extractor, and expressed himself as believing this was the coming way of taking off a large quantity of honey.

He thought that the subject of keeping more bees in a large apiary was coming more and more into prominence. At one time he was almost the sole advocate of it; but judging from his correspondence there must be quite a number of bee-keepers who were gradually working into the scheme of using fewer yards and more bees to the yard. He spoke of the peculiar conditions of his locality: of the large amount of honey that he secured from buckwheat, goldenrod, and aster.

In the general discussion that followed, goldenrod as a honey-plant was discussed first. Some one asked for reports. A few found that it did not yield any honey, while others secured considerable from it. Some question then arose as to whether goldenrod was a dark honey or not. Mr. O. L. Hershiser held that it was not dark unless it had buckwheat in it. As both bloom simultaneously in many localities there was apt to be considerable buckwheat in it. Others, not in the buckwheat country, testified that goldenrod was a light honey.

At this time some discussion arose as to the different honey-plants—what they were, and whether they yielded honey, and under what conditions. Prof. Surface offered the suggestion that a committee be appointed to work in connection with the State and federal governments, to have a botanist or botanists appointed, who were to name, for members of the National Association, honey-plants that might be sent in. A committee was duly appointed; and probably something along this line will be announced later.

At the next session, or the following afternoon, the subject of plurality of queens, as introduced in Mr. Alexander's paper, re-

ceived a spirited discussion. We will not attempt to give all that was said, any more than to state that there seemed to be a general agreement that two or more queens, each one separated by perforated zinc from every other queen, could be kept in one colony of bees so long as there was general prosperity in the hive; but when a dearth of honey came on, there seemed to be a feeling that all the queens would disappear except one. Two or three reported they made a success of the two-queen system. Among them was Mr. E. E. Pressler, of Williamsport, Pa. He, like Mr. Alexander, had made a success of it, and even gone so far as to make the system work without the use of even perforated zinc, but had not been able to test the principle this past summer, owing to an affliction of the eyesight; but he thought there was great possibility along that line. But the majority of those present who took part in the discussion seemed to feel that it was practicable to run two queens to a hive, *providing* they were separated by perforated zinc.

As noted at the outset, the secretary, Mr. Green, had been very busy, and therefore was unable to prepare a program. In view of the fact that he had been formally nominated to succeed himself, some of the members present felt that it was unwise to force upon him a duty that he would probably have declined if he were present and knew that he had been nominated. Mr. R. F. Holtermann, therefore, introduced the following resolution:

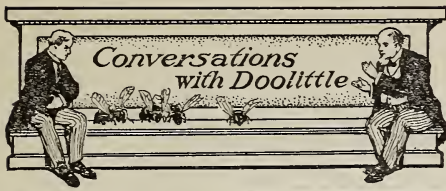
Resolved, That the members of the National Beekeepers' Association assembled at Harrisburg, Pa., feel that, owing to the very many duties of their present secretary, Mr. J. A. Green, and his inability to attend to those duties properly, this position should not be forced upon him for another year; that we take this action with regret, realizing that, if other duties would permit, Mr. Green would make an able and capable secretary.

It is further resolved, that, while we would in no way seek to dictate to any member how to vote, in view of all the circumstances we would recommend that, at the coming election, Mr. O. L. Hershiser, of Buffalo, N. Y., receive the undivided support of the Association.*

As it would be practically impossible to get this resolution before the general membership before the next election, the editor of GLEANINGS was requested to place it in his next issue. While this resolution is nothing more than a recommendation, yet it is a suggestion to the membership at large.

We were also requested to announce that the members of the Pennsylvania Beekeepers' Association in their Convention which was held just before the National, introduced the name of Prof. H. A. Surface for Director from Pennsylvania. It was felt that the great Keystone State had no representation, and it was no more than fair and right that it should have a Director. As there are three whose terms of office expire, the membership will now be at liberty to act accordingly. We will, if our space permits, continue the National report in our next issue.

*A copy of this was sent to Mr. Green; and just as we go to press we have received a telegram reading: "I withdraw; could not serve if elected."
J. A. GREEN."



UNQUEENING, WHEN AND HOW DONE.

"Mr. Doolittle, I wish to have a talk with you about unqueening, or taking the queen away from colonies of bees."

"But you are not wanting to take the queens from any of your colonies at this time of the year, are you?"

"No; but I tried the plan in a limited way last summer, and have been very enthusiastic over it. A bee-keeper who knows you, told me you had two plans of unqueening, and I want you to tell me how you work with them. When do you begin the work?"

"About fifteen days before the expected honey-harvest."

"Why that number of days?"

"So that the young queen may commence to lay a day or two after the honey-flow is on."

"What do you do with the old queen?"

"I kill her or form a nucleus with her and one comb of bees and brood, just in accord with which seems the most profitable to me."

"What do you do with the nucleus?"

"Use it for taking an occasional queen from to replace poor queens, or from which to get an occasional queen at any time of emergency when it is necessary for me to have a queen at once. No bee keeper should attempt to keep bees without running one nucleus to about every twenty-five colonies he may have in his apiary. If queens are not needed, these nuclei will build a frame of worker comb every week or so during the summer months, and thus add much value to the sum total at the end of the year."

"I see. What further do you do with the colony now made queenless?"

"Ten days later all queen-cells are cut, and a ripe queen-cell, from my very best comb-honey queen, is given, and that ends the matter, unless by outside diagnosis I mistrust this young queen is lost or fails to become a perfect mother."

"If you mistrust the queen is lost, what then?"

"The hive is opened; and if no eggs or larvae are found, a queen from the nucleus is given."

"Ah! I now see something of the value of that nucleus. I could have saved quite a considerable the past season if I could have had queens for three or four colonies which I found queenless just in the height of the honey-flow. But do the bees not swarm out with the queen when she goes out to meet the drones?"

"Some claim that they do so; but with me no such trouble has occurred during the past."

"What about the other plan?"

"The other plan uses the old queen; or, in other words, the queen is not killed nor taken from the hive."

"Do you begin about the same time as with the first?"

"Not quite as soon. With this plan I wait till about five days before the expected harvest, when the queen is caught and caged, the cage containing her being placed just on top of the bottom-bar to a central frame in the hive, near the entrance end."

"Why do you place her and the cage thus?"

"Because I find that, when she is at this point, the bees as a rule work right along the same, or nearly so, as they would if the queen had her liberty. In other words, when I cage a queen and put the cage near the top of the brood-chamber the bees seem to feel as if they were queenless, start queen-cells at once, or as soon as they would if the queen were taken from the hive, and lack in energy about working, very much the same as a queenless colony does. But cage her near the entrance, at the bottom of the hive, and work goes right along, often without any queen-cells being started at all."

"That is a point worth knowing, certainly. But what next after caging the queen?"

"I wait ten days, then open the hive, cut the cells, if any are found, when the stopper to the cage is removed and replaced with one having about two inches of queen-candy in it."

"Why that much candy?"

"This amount requires about two to three days for the bees to eat through it so as to liberate the queen, thus keeping them without a laying queen for about fifteen days."

"But ten and two or three does not make fifteen days, does it?"

"No; but I said without a *laying* queen. A queen just from a cage does not begin to lay at once, or immediately upon her release from her imprisonment. She has to be fed prepared food for about two days before she begins to lay very much."

"That is something I had not thought about, but presume you may be correct in the matter. But does not this week or ten days of honey harvest, when no eggs are being laid in the cells, cause the brood-chamber to become filled with honey?"

"To no great amount, where the queen is caged near the entrance, for the bees are at work in the sections all the while, very nearly the same as would be the case did the queen have her liberty. And this way seems to work fully as well as the first regarding the prevention of swarming; and, so far as I can see, the presence of the queen thus caged in the hive gives all the energy to the bees ever obtained under any circumstances where the old queen remains in the hive during the swarming season."

"But does not such a liberating of the queen just at this time in the harvest result in a whole lot of brood-feeding when the honey-harvest is at its height?"

"All the eggs laid by the queen are gener-

ally matured. Why do you ask that question?"

"Because I am against much brood-feeding when the harvest is at its best. It takes too much of our surplus crop."

"All of my past experience says that for energy, and a great rush of honey to the sections, give me the colony whose queen begins to lay right in the height of the honey-flow, when said colony has been without a laying queen for about two weeks. I claim that this extra energy gives far more honey in the sections, besides feeding the brood, than can be gotten by any other plan where there is no brood to feed after any colony has been without a laying queen from two to three weeks."

"Well, I did not think so, but I will try it next summer."

"I would advise you not to run wild over these or any other plans you have not tried; but just try the thing on three or four colonies; and then, if you are pleased, try it more extensively the next year; and then, if fully convinced, use the whole apiary in the successful way till something which outrivals the plans you are using turns up. Then go slow again, and in this way you are always safe."



DOING THE FAIRS WITH BEE EXHIBITS.

This has been my hobby for years, but I have broken it only well enough to ride it this year. Bee-keepers' exhibits at fairs are very profitable to the bee-keepers, and are great educators to the general public. Here it is that they are given an opportunity to learn and to see many things pertaining to bee-keeping. Then the honey in the comb and glass makes many a spectator's mouth "water"—we've heard the expression hundreds of times.

We have just been at the State Fair at Dallas, and are now at the International Fair at San Antonio, with an exhibit of the Texas Bee-keepers' Association. Besides the bee-keepers' exhibit of bees, honey, wax, etc., we have a large wire-cloth cage in which daily demonstrations are made in handling bees. This is a great drawing card. The results of such exhibits will be profitable for the members of the association.

The matter of bee-keepers' exhibits has been made a permanent one of the Texas Bee-keepers' Association, and a general premium list that will be suited for the purpose has been adopted, which is in effect now at the Dallas and the San Antonio Fairs, and is also used at the annual exhibit of the association at its annual meetings. The amount

of premiums is the same at each of the three places, and are well worth working for. I will give a copy of it here, and should like to ask every reader who is interested in this matter to keep this page for future reference. Mark the number of this page somewhere on the wall or in your reference-book.

BEE AND HONEY DEPARTMENT—CLASS A.

| | | |
|---|----------|--------|
| Golden Italian bees and queen in single-comb observatory hives..... | \$5.00 | \$3.00 |
| Three-banded Italian bees and queen in single-comb observatory hives..... | 5.00 | 3.00 |
| Carniolan bees and queens in single-comb observatory hives..... | 5.00 | 3.00 |
| Caucasian bees and queens in single-comb observatory hives..... | 5.00 | 3.00 |
| Cyprian bees and queens in single-comb observatory hives..... | 5.00 | 3.00 |
| Holy Land bees and queens in single-comb observatory hives..... | 5.00 | 3.00 |
| Banat bees and queen in single-comb observatory hive..... | 5.00 | 3.00 |
| Black queen and bees in single-comb observatory hive..... | 5.00 | 3.00 |
| Best display of bumble-bees..... | 5.00 | 3.00 |
| Best display of ground bees..... | 5.00 | 3.00 |
| Best and largest display of bees of various races in observatory hives..... | 10.00 | 6.00 |
| Best and largest display of queens of various races in mailing-cages..... | 5.00 | 3.00 |
| Best case of white section comb honey, 12 lbs. or more..... | 5.00 | 3.00 |
| Best case of light-amber section comb honey..... | 5.00 | 3.00 |
| Best and largest display of section comb honey..... | 5.00 | 3.00 |
| Best display of special designs of comb honey..... | 5.00 | 3.00 |
| Best 12 lbs. friction-top pall white bulk comb honey..... | 3.00 | 2.00 |
| Best 6 lbs. friction-top pall white bulk comb honey..... | 3.00 | 2.00 |
| Best 3 lbs. friction-top pall white bulk comb honey..... | 3.00 | 2.00 |
| Best display of bulk comb honey..... | 5.00 | 3.00 |
| Best dozen jars white extracted honey..... | 3.00 | 2.00 |
| Best dozen jars light-amber extracted honey..... | 3.00 | 2.00 |
| Best display extracted honey, granulated form..... | 5.00 | 3.00 |
| Best sample cake of bright yellow beeswax, not less than 2 lbs..... | 5.00 | 3.00 |
| Best and largest display of beeswax..... | 5.00 | 3.00 |
| Best display in special designs in beeswax..... | 5.00 | 3.00 |
| Best display of fruit preserved in honey..... | 5.00 | 3.00 |
| Best honey vinegar..... | 3.00 | 2.00 |
| Best instructive display in aparian products and of the various uses made of honey and beeswax..... | 20.00 | 10.00 |
| Best and largest display of bee-keepers' supplies..... | Diploma. | |
| Best collection of Texas honey-yielding plants, pressed and mounted..... | 5.00 | 3.00 |

All matters pertaining to the above may be addressed to me as chairman of the committee on exhibits, and secretary of the Texas Bee-keepers' Association. LOUIS SCHOLL.

SUPERSEDURE OF QUEENS.

There has always been a doubt in my mind whether we could leave it to the bees to supersede their queens at the proper time. Arguments both pro and con have been many; but I have come to the conclusion that it will pay, and pay big, for the apiarist to look after this instead of leaving it to the bees. My experience is that the bees will tolerate old queens in their hives longer than is profitable for their owner. Too often the queens get so old and feeble that the colony dwindles down to a mere nucleus before it gets a new queen and will require a long time to recover, if at all, at the expense of the bee-keeper. In one of my apiaries of 42 colonies the failure to look after and replace the old worthless queens at the proper time resulted in decreasing the number to 34 in one season, and then to 26 during the one following. At this rate it would not take very long to have a beelless yard.

This danger is greater during poor seasons than in more favorable ones; and where bees do not swarm it is also much greater. If the colonies swarm, a new queen takes the place of an old one; and this accounts largely for

the rapid dying-out, sometimes, of an apiary that has been neglected, or an apiary in which the colonies will remain in good condition for many years. In the first, a few poor seasons and no swarming leaves the old queens in the hives, and the colonies soon give way in a few years. In the latter, during several favorable years, during which the bees have been left to swarm, and go to the woods, new queens have kept the colonies up.

I believe in requeening with good young queens, yet not in a wholesale way. Every fall is entirely too often to requeen every colony; and even to do this every two years is too much, as I have had many queens do excellent work in their third year. Whenever a queen fails to do good work she ought to be superseded, and this can be done at any time; however, I prefer to do all requeening immediately after our honey harvest. This is when queens can be obtained easily and at a very low price from reliable queen-raisers.

The exclusive honey-producer, during the rush, has not the time to raise the *best* queens; his time is too valuable during the honey-flow, and after that he is occupied with profitably marketing his crop. So it has been easier for me to get my queens annually by the hundred from a competent queen-raiser, and requeen all colonies having poor queens. Herewith I am giving a letter from my friend Sueltenfuss right along this subject. Besides, it contains some other notes.

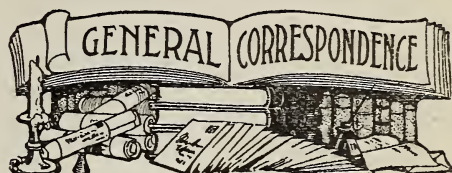
I am in a bad fix this fall with some of my queens, as they are too old—some two, some three years old. I should have killed them just after the honey-flow, and let the bees requeen themselves. Only a few colonies superseded their queens themselves. One of these I just looked into when it had nearly ripe supersedure cells. On seeing this I took out the old queen, which had been a good one, went to another colony which also had an old but undesirable queen of the fall of 1904. I quietly picked her off the comb, killed her, and placed the first one in her place. The bees took kindly to her, but superseded her after a few weeks, as she was very feeble. But that was just what I wanted. Last year I did this twice over with an old queen, and I had the intention of practicing it more extensively this season; but the honey-flow was cut off so short here the first week in July that I found it impossible to do it, on account of robbing; and when there is no honey coming in, the bees are much less disposed to accept a strange queen kindly. That is the reason I have the old queen on hand now; and another obstacle was the robber-flies in July and August. I have a suspicion that they caught two young queens which were lost when they were out to mate. Robber-flies can often be seen on the hive covers watching their chance. A good way to kill them is to take a light piece of lath, about 18 inches long and 1 to 1½ inches wide, and quietly but quickly hit them on the head. They can easily be approached, as they are very bold and saucy. By the way, the large black or gray robber-flies also catch the large brown wasps (those that build their paper nests in trees). I saw one with a wasp myself. Robber-flies are a menace to young queens here every summer. The first few years I had bees I thought birds were to blame, but I know better now.

I could buy queens, but they cost money; but I suppose I shall have to buy a few to replace the oldest and most undesirable. I didn't see any drones, so it is out of the question to let the bees requeen themselves now. I have one colony with a virgin queen. I am wondering whether she will be able to mate yet or has mated. I looked into the hive to-day and found her too. She was very quiet, but not laying. She had not the appearance yet of a laying queen. Perhaps she mated yesterday. I will find out in a few days. I have found so far that it is poor business policy to let the bees do their own superseding.

I found out something this year in connection with

the clipped-wing plan. One afternoon four swarms came out, and all went into one hive. That was after the first extracting, and I had no idea they would get the swarming fever. The assertion is made by some that bees will supersede their queen if one of her legs is cut off. Well, last year I cut off a leg of an old queen, and the bees promptly superseded her; and this year I practiced it on two old queens, but the old ladies are still on hand. The colony last year was yellow Italians, three-banded. Those two this year are black hybrids.

OTTO SUELTFENFUSS.
San Antonio, Texas.



POSITION OF HONEY IN REFERENCE TO THE BROOD-NEST.

Does a Normal Colony Ever Store Honey Below the Brood?

BY J. E. HAND.

I notice that the Straw man, p. 948, takes exception to my statement, page 899, that bees always store honey at the sides of and above the brood, but never below it. Of course, this statement has reference to bees in a normal state unrestricted by the hand of man. Nor did I intend to convey the idea that honey would always be found at the sides of the brood and along the top-bars of brood-frames, for this is a matter that is governed by the extent of the honey-flow, the amount of super room, the prolificness of the queen, and, I might add, the race of bees; for it is a fact well known that the Italian bees are more inclined to store honey in the brood-chamber than the blacks. It is true that a prolific queen will often fill the outside combs of an eight or even a ten frame hive with brood in the height of the breeding season; however, if there is any honey in the brood-apartment it will be at the sides and above the brood and not below it; and if there are combs below the brood-chamber not occupied by the queen for brood they will be empty. The habit or instinct of the bees to surround their brood with honey at the top and sides, working the brood downward to make room for the honey above as well as drawing it in at the sides, leaving the outside combs for honey, is more noticeable in the sectional hive where three brood-sections are used, making a brood-chamber 15½ inches deep.

The fact that bees may be compelled to store honey temporarily below the brood proves nothing, and does not change the nature or instinct of the bees; for as soon as the pressure that compelled them thus to store honey is removed, such honey will be quickly removed and placed above and at the sides of the brood, even though it be capped.

If I am not mistaken it has been only a few years since Mr. Doolittle practiced placing sections at the sides as well as at the top of the brood-apartment to have them filled with honey. In fact, this practice was in common use some 25 years ago. I hardly think Dr. Miller would wish to go on record as saying that bees in Illinois are as likely to store their surplus below the brood-apartment as at the sides and above it, and yet that is about the impression one receives from reading the Straws above referred to. My statement on page 899 to which the good doctor takes exception is perfectly orthodox in my location, and I suspect that bee nature is very nearly the same in Illinois as it is in Ohio.

Birmingham, Ohio.

BEE-HUNTING.

More Profitable to Cut the Trees in the Fall.

BY ELIAS FOX.

In reply to John R. Lockard, page 322 of the March 1st issue, I would say that, unless his bee-trees are better supplied with honey than most of them are here, his profits (if any) would be greater if he would cut them in the fall, and it would also be much more humane, for swarms could be saved that otherwise would perish long before spring from the want of sufficient stores to carry them through.

I hunt bees for recreation and to save swarms that would starve if left in the tree and take a *chance* on the possible profit, and I have driven into the country in the fall and brought home swarms where others had cut the trees, robbed the bees of their honey, and left them to perish. Two years ago I wintered ten swarms that I took from trees, mostly of my own finding. My method is this:

I have a box made of thin boards, 17 inches long, 11 inches wide and 6 inches deep, with 3 very thin boards 5 inches wide, slipped inside between thin cleats tacked inside the ends (wooden combs or dummies), for the bees to cluster on, with half-inch space at bottom and top, so as not to crush the bees and allow them free passage. The cover is thin boards with half-inch cleats on each side to slip down over the top of the box, with four 1½-inch holes, one near each corner, with wire screen tacked on under one side to give plenty of air, cover fastened on with a wire hook and a screw-eye at each end, and a strap firmly nailed across the top for a handle to carry it by. Then I bore a 1½-inch hole in the center of one side at the bottom, and this is closed with a little sliding gate that also has a 1½-inch hole in, covered with wire screen. This box, by taking the three division-boards out of the cleats and laying them in one side of the box, makes room for a whisk-broom, smoker, and honey-knife; and when thus packed I slip it under the buggy-seat with my ax and hunting-box,

and set a lard-can, with the cover on, in front of the seat, and hitch up my team, and away I go to some place favorable for bees; and, after getting permission from the land-owner, I usually put my team in his barn and feed them, and away I go with hunting-box to attract the bees so I can trace them; and when I find the tree I return to the buggy and get my outfit and cut the tree by falling it on to some small tree to break the force; blow a little smoke in at the entrance and chop in two cuts and split off one side; then I set my box on the log, close it, and proceed to take out the combs and brush the bees in front of the entrance (always making sure to get the queen in); and in they go. I cut the honey out and put it in the can and put the empty combs and brood on top of it and put on the cover and wait an hour or so for the flying bees to get in the box.

When I get home I fit up a hive with honey, cut out some of the old combs, and insert the brood in the combs, jar the box down on the ground, which loosens the bees from the cover which I remove, and dump the bees in front of the hive, and in they go.

I have eight swarms thus taken last fall (the last one Nov. 28); all are apparently in fine condition and perfectly contented. Out of the eight, only three had enough honey to have wintered them. I have had but one man refuse to let me cut a tree, for I usually divide the honey with the owner of the land.

I enjoy hunting any and all kinds of game; but there is a fascination about bee-hunting that I find in no other kind. I like to watch them as they cautiously at first approach the box; then, after filling themselves, watch the zigzag circles they describe before they make straight away.

Hillsboro, Wis.

WINTER CASES.

Cheap and Effective Ones Made out of a Good Grade of Manilla or Flour-sacking Paper; Some General Suggestions on Outdoor Wintering in Mild Climates.

BY E. R. ROOT.

A year ago we made some winter cases of a heavy grade of roofing-paper; but the stock was so heavy it was very difficult to fold it; and, when once folded, it was necessary to rivet it at the folds. Even when completed, the thing was very flimsy and it did not look as if it would possibly stand more than one season's use. When we came to figure on the cost of material and labor of making, it was almost as much as a case made of lumber. While the roofing-paper itself was cheaper than wood we discovered, somewhat to our astonishment, that the labor of folding and riveting it into a winter case was considerably greater than when made of wood.

But the suggestion has been made, and made repeatedly, by different ones who have tested it, that it is not necessary to use such heavy paper. A good grade of manilla, about

the heft and grade of flour-sacking or any strong wrapping-paper that can be obtained at the stores, it was claimed, would make a winter case that is very cheap and satisfactory.

We have accordingly prepared a few hives for outdoor wintering in our yards, and here-with append illustrations to show what we did. We first took several thicknesses of newspaper long enough so they would reach down over the sides and ends. For a climate like this we would estimate it would require

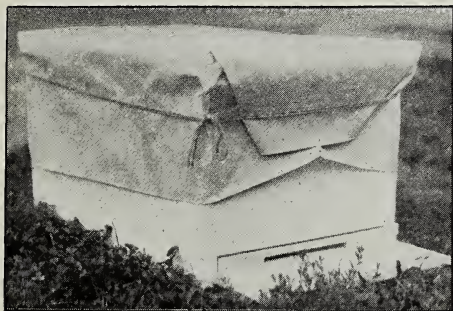


FIG. 1.—RIGHT WAY OF FOLDING THE PAPER TO SHED WATER.

about two inches of loosely folded paper or old grain-sacks that are not fit for any other purpose. A large square of manilla paper is laid on top of the hive. The sides and ends are tucked down and folded (as one would do up a package), when they are tied, as shown in Fig. 1; but do not make the mistake of folding the paper as shown in Fig. 2, for then it will be apparent that the folds will catch water, resulting in a leak.

Whether it will be necessary to oil these papers to prevent their water-soaking during the winter we can not say from experiment; but we are oiling ours, and would advise others to do so.

The two illustrations do not show a large enough sheet of paper. It should be wide enough and long enough so that, when folded, it will reach clear down to the bottom-board, leaving just space at the entrance for the bees to pass in and out.

But it may be argued that a few hives would take all the spare newspapers that could be found in any ordinary home; perhaps, but in these days of a large daily for one cent, most homes will have a good supply if they have not sold them to the paper-rag man; but if these are not available one can go to the produce-grain dealers and buy up old sacking, or burlap wrappings, for a very small sum. This will be better than paper, and, what is more, will fold nicely over the sides and ends of the hives as well as the tops.

The two illustrations show two hives prepared after they were set out of the cellar in the spring, and did not have any paper between the covering and the hive proper. Moreover, the regular hive-cover with pro-

jecting cleats was left on the hive. We would advise putting on a thin super cover for outdoor wintering; then put on the two inches of sacking or old newspapers, old quilts or carpeting, and then afterward the hood of manilla paper. When in place, put on the regular hive-cover to cap the whole. This will help to make up the roof proper, and at the same time give additional protection to the top of the hive.

This scheme of wrapping hives with heavy manilla paper, or any good wrapping paper that will shed water, is very easy to carry out; and there should be no excuse on the part of any one by reason of expense to let his bees winter outdoors unprotected when a few minutes and a cent or two per hive will probably give every colony cheap and good protection. We do not positively say it would, but we are relying upon the reports of others who have tested it, and say that it is very satisfactory. We have tested the same kind of winter case made of heavy roofing-paper, and find that bees winter very nicely, or, so far as we can discover, winter bees well.

In the colder climates it will be necessary to use a thicker layer of packing material between the paper hood and the hive. One will have to judge from his own climate.

PAPER HOODS FOR SPRING PROTECTION.

This method of protecting colonies is so very cheap and effective that, in our opinion, one could use it to good advantage on colonies just set out of a cellar in the spring. The slight cost would be more than made up by the saving in stores, more brood, and, consequently, a colony further advanced for the harvest. In the spring of the year most apiarists will have plenty of time in which to do this.

If the paper be not too heavy, and be carefully laid away in the flat after removal, it might answer for two or three seasons, and the inner packing of old sacking or newspapers could be used for many years.



FIG. 2.—WRONG WAY.

We have tried different ways of holding the folds in place, but know nothing better than common wool twine tied in a bow knot. The drawing of the knot releases the whole thing. The hive is then ready for examination.

CELLAR VS. OUTDOOR WINTERING.

It is our opinion that, in all localities subject to two or three good fly days almost every month in the year, that the outdoor method of wintering will be far more satisfactory, especially to the beginner. Cellar wintering requires ideal conditions, considerable skill, and a climate where there are no fly days during mid-winter. Any locality where it warms up so the bees can fly during January and February is apt to warm up the cellar so as to cause uneasiness on the part of the bees. A repository that can not be cooled off, and the bees are uneasy, is liable to cause a large death loss before spring, especially if this uneasiness occurs during the period of January-February. Where one has a certain amount of open winter, this paper method of protection will, we believe, prove to be cheap and effective; and even in climates where outdoor wintering gives fairly good results without any protection, we would say by all means use a paper hood like those here shown, without any packing underneath. The cost will be slight but the gain will be great. There are a good many localities in the South, especially those exposed to strong winds, where a paper covering of this kind will be found to be very advantageous.

While on this subject we would advise for outdoor wintering that the entrance be contracted about as shown in the illustrations; namely, $\frac{3}{4}$ x 8 inches wide for strong colonies; for the medium, $\frac{3}{4}$ x 4 or 5 inches; and the weak ones correspondingly smaller; but very weak colonies we would advise putting into

the cellar during the months of January and February where the climate is more or less open, and then setting them out the first of March; or, better still, unite the weak ones and put them in an outyard.

HARVESTING SWEET-CLOVER SEED.

BY A. L. AMOS.

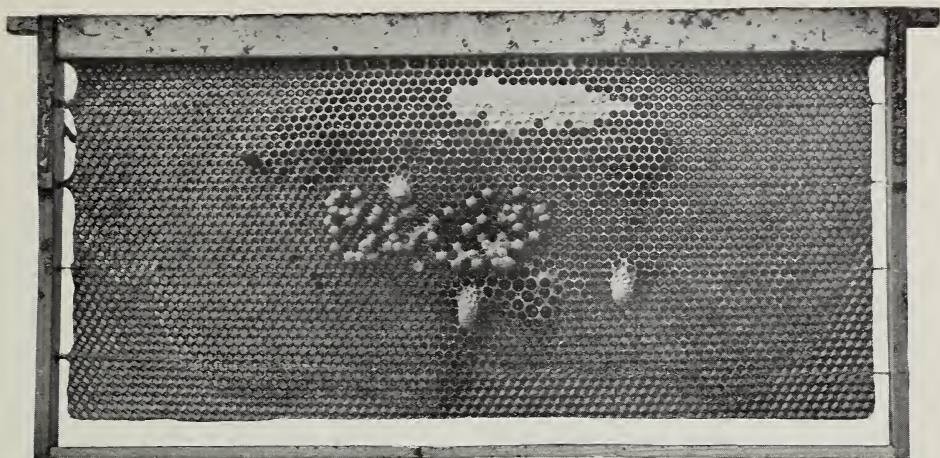
When, in my enthusiasm, I commenced to write of yellow sweet clover as a honey-plant it was without the slightest intention of going into the seed business; but so many inquiries came to hand asking if I could supply seed or tell where it might be obtained, that I began to study whether I could not do something toward supplying the demand. I hit upon a plan of harvesting the seed in a small way, which may be of interest to those who would do likewise.

I have the clover cut with a mowing-machine when the seed has partly ripened. I have this cutting done after a rain, or in the morning when the dew is on it, as the seed does not shake off so easily when wet. It is allowed to lie for a few days to finish ripening, when the girls and I "go for it" as shown in the picture.

We spread the buggy canvas on the ground, and pile on the clover. We do this in the morning when it is wet, and allow it to lie till late afternoon, when it is thoroughly dry and yields readily to the feet and sticks of the young harvesters. After a vigorous pounding and tramping we



THRASHING OUT YELLOW-SWEET-CLOVER SEED.



THE RESULT AFTER INTRODUCING A DRONE-LAYING QUEEN.

find from ten to twenty pounds of seed on our canvas. We sift it twice and put it in a sack. Our work with the clover stretches over a week or more, and we have no very large quantity then, but enough to supply many bee-keepers who want only a little to try it.

If one wants a clover-field to be good year after year as I do, I consider it very important to remove the greater part of the seed. If this is not done it sows itself too thickly. In harvesting as we do, there is always enough left to seed the ground nicely for another year.

Comstock, Neb.

[While this may savor of free advertising we are glad to give the space, as it is difficult to get nice yellow-sweet-clover seed. As many desire it, here is a chance to get some of it.—ED.]

A TESTED BREEDER THAT PROVED TO BE A DRONE-LAYING QUEEN.

BY W. A. PRYAL.

I have recently had a very interesting study in queens, which came about in this way: I wanted a tested Caucasian queen which I could use as a breeder, as I wished to raise a few queens for my own use. I therefore sent to a breeder who had an established reputation, and in the first week of August I received the queen. She was to be one of "last season's crop," and fully guaranteed.

After introducing her I noticed that she was a poor layer; but this I attributed to her shyness, and the further fact that the bees had not yet "taken to her," as I found evidence of an inclination on the part of the bees to build queen-cells. When I found some drone-brood doing nicely in cells to their liking, I did not think any thing more of the matter than that I was fortunate in

getting a batch of Caucasian drones at a time when all other drones in the apiary were being banished for the remainder of the year, and I removed this comb to a hive where I believed the forthcoming Caucasian drones would be cared for. There was now no comb in the hive with the queen I am writing about, the frames being filled with new foundation. I did not open the hive again for several weeks, as I thought it was about time that some of her workers should be hatching out, and I wanted to see what they were like.

At this point I got a rather "bad jolt." There were no young workers, but plenty of drone brood and some queen-cells. I thought she might have been superseded, but she was not, for I found her with one wing clipped. There were some eggs in the combs. She was laying at random in two of them. I concluded that the fine tested queen I purchased was a first-class drone-layer. But how did she become such? There was the rub!

I studied the matter over, backward and forward, but to no purpose. I thought she might have been injured in the mails; that she might be an ancient one, and that her days of fertile prolificness were spent. Then I thought that perhaps the breeder clipped her wings before she was fertilized. This latter could not be so, inasmuch as she was sold to me as a tested breeder of "last year's crop."

Well, I took a photograph of one of the two combs she was laying in. I never saw one sheet of comb that contained at one time so many stages of comb-building. Here we have the undrawn foundation—as may be seen about the outer edges, the cells in all stages of development; the beautifully capped honey, the capped brood, two completed queen-cells, and one unfinished one. The most remarkable feature is where the bees have started to convert worker-cells into drone-cells, and have even been fashioning

one of the latter into a queen-cell. But, strive as they would, the bees were unable to bring forth a single worker, much less a queen.

Upon laying the foregoing state of affairs before the breeder, he mailed me another, which at this writing is going through the process of "introduction" in another colony.

Oakland, Cal.

[This is certainly a very interesting exhibit of comb-building—one of the best of which we have any photographic representation; but the bees did nothing more than what we would naturally expect and what practical bee-keepers have seen time and again, where there is a drone-layer. Nature in a case of this kind seems to have skipped a cog, for every thing seems to be out of balance; and the bees—well, they hardly know what is the matter. Apparently they are seeking to raise a queen, not being satisfied with what they have. Then they attempt to take care of the drone-larvæ, which means larger cells. Where there were no eggs they built worker comb because that was easier off the foundation.

A rather interesting part of this comb-building was the two queen-cells. It has been stated that, where cells are built and completed from drone-larvæ they will be very smooth without any corrugations. This does not appear to be true in this case at least.—Ed.]

CITY BEE-KEEPING.

Bees on a Tin Roof.

BY A. KIRCH.

The photo shows a view of my apiary. Honey is not plentiful here in Brooklyn, owing to the great distance bees have to fly to find something. My crop amounts to from one to three gallons a year from each hive. I have kept bees since 1886. The eight-frame Dovetailed hives are over 20 years old, and it seems they will last another 20 years.

It was owing to a lack of room on a small city lot that I had to place the bees on a roof. If there were any other way I would not advise anybody to do so, because it is very hard to go up or down the ladder or stairs with large supers, bringing new colonies up, etc. On the other hand, they are out of the way, and would not sting anybody. I formerly kept bees on the outskirts of the city, but it is troublesome to be away from the bees in swarming season, so I had to give it up. Clipping the queens' wings I think is not advisable on a tin roof, because in the summer time the queen is likely to be hurt if she crawls out on the hot tin. My wife catches all the swarms because I am not home in daytime. I keep down increase by uniting the weaker ones in fall. The



KEEPING BEES ON A TIN ROOF IN THE CITY OF BROOKLYN.

honey harvest is small where the bees have to fly from three to five miles to cemeteries or parks, and gardens are scarce in large cities because ground is too valuable.

Brooklyn, N. Y.

THE ASPINWALL NON-SWARMING HIVE.

A Second Year's Test at the Vernon Burt Yard; what One of the Most Extensive Bee-keepers in the United States Thinks of the Hive.

BY E. R. ROOT.

By referring to page 399 of our issue for March 15, this year, one will see several illustrations showing the Aspinwall hive after one season of test; but, unfortunately, the photo at that time failed to show the vital feature of the hive—namely, the slatted divider that is inserted between each pair of frames and each row of sections. Mr. Burt has given the hive another severe test for another year; and while the colony was booming at its height we took some more photographs showing its external and internal construction. These we present here-with.

It will be recalled that the Aspinwall hive is different from any other that was ever invented. While it employs some well-known old principles, it uses one feature that is certainly novel. This is the slatted divider, a sort of frame in which are mounted a series of perpendicular slats $\frac{1}{2}$ inch wide, $\frac{1}{8}$ thick, and $\frac{1}{8}$ apart. One of these dividers is inserted between every alternate comb. First there will be a divider, then a comb, then a divider, then a comb, and so on. The practical result of this is that every comb is sep-

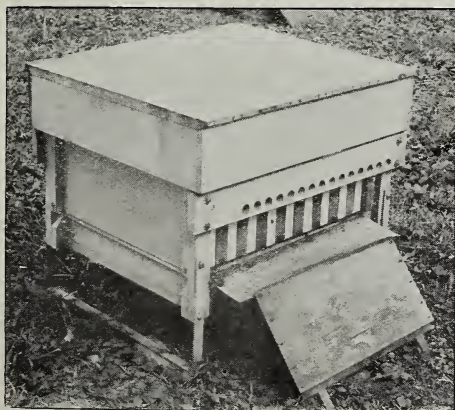


FIG. 1.—ASPINWALL NON-SWARMING HIVE.

arated from its neighbor by one inch. There would be no need of having perpendicular slats bee-spaced apart except that these must necessarily be used to keep the bees from building comb between the two others. It

will be seen that the brood-nest is broken up into a series of divisions, each division consisting of one comb of bees and brood; but these divisions are not separated, but are made homogeneous with the others by the cluster of bees reaching from one comb to the other between the slats. Just why this splitting-up of the brood-nest should stop swarming may not be entirely clear; but, ap-

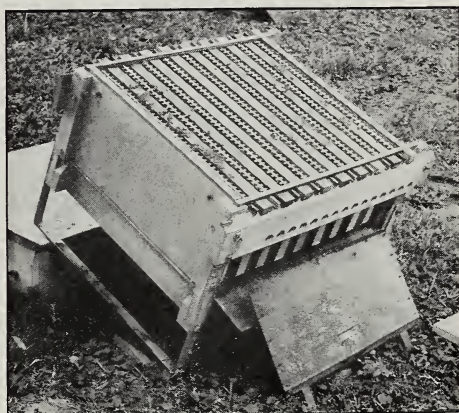


FIG. 2.—ASPINWALL HIVE WITH COVER REMOVED SHOWING POSITION OF FRAMES AND DIVIDERS.

parently, these slatted dividers have the effect of keeping the bees all in the hive, no matter how hot the weather, where they do not seem inclined to swarm; but, on the contrary, work and store honey in the supers.

Last year and this year were rather poor, but Mr. Burt, in order to bring on swarming conditions, jammed in the feed day after day, to see if he could not force out a swarm; but the bees stayed contentedly at work. While this with one colony is by no means a conclusive test, the fact that he could not force the colony to swarm, which was a powerful one, is somewhat significant.

THE ASPINWALL BROOD-FRAME.

Fig. 4 shows at the top an Aspinwall frame, and at the bottom one of the slatted dividers. One will notice that there are four instead of one end-bar. But those next to the comb are one inch wide, or the same width as the top-bar of the frame, while the outer end-bar is $1\frac{1}{8}$ wide, and therefore wider than the others. The purpose of these extra bars is to give a large cluster of bees around the ends of the combs as well as between them. It will be seen, then, that every comb is surrounded with a large amount of animal heat. As there is a lot of space inside the hive, there is no need of the bees clustering outside, where they become discontented and finally swarm.

The same scheme of separating the sections above, that is employed in the brood-nest, is used. It will be noted that these slatted dividers not only separate the rows of sections,

but act as separators or fences at the same time.

The hive proper consists of only a framework made of narrow stuff. The ends are closed up by the end-bars of the frames, the same as in the Quinby system, while the two sides exposed are covered with a couple of panels. These are secured in place by means of a wooden rod inserted in one of the holes shown in front and a corresponding hole in the rear. See Figs. 1, 2, and 3. Between the wooden rod and the panel there is inserted a wedge which, when pushed down, crowds the follower against the brood-nest.

The framework is secured together by means of bolts; and for the purpose of packing or re-shipping, the hive could easily be put in the knock-down condition in a few minutes by removing the bolts.

As will be seen by reference to Fig. 3, the frames are suspended, not in a hive-rabbit, but on a cross-bar of the framework. To provide the necessary bee-space between the brood-nest and super, narrow strips of wood $\frac{1}{4}$ inch wide are laid just over the end-bars at each end when the super is put in place, the extra width of the follower-boards closing up the gaps at the sides.

The several illustrations will show the gen-

eral principle of the hive; and for the purpose of taking a photograph, in order that the internal arrangement might be shown, the hive was tipped up, the back end resting upon the telescope cover, also made of narrow slats and covered with tin. See Figs. 2 and 3. It will be noted that the slatted dividers have the end-bars painted white. While this was merely accidental on the part of Mr. Burt, it shows for the purpose of the photograph a sharp dividing line between the dividers and the frames.

As to the future of this hive, we are making no prophecies; and neither, for that matter, is Mr. Aspinwall; indeed, for an inventor he is very modest in his estimates of what it may do. He has tested it for several seasons with the most gratifying results.

When L. E. Mercer, of California, called upon us a few days ago, as noted in our last issue, we took him out to the Burt yard to show him this Aspinwall hive. After we had explained the hive he seemed to be very much pleased with its construction, and immediately said he believed that the principle was all right—that, while he was an extracted-honey producer in California, if he were producing comb honey in the Eastern States he would be inclined to adopt this hive as

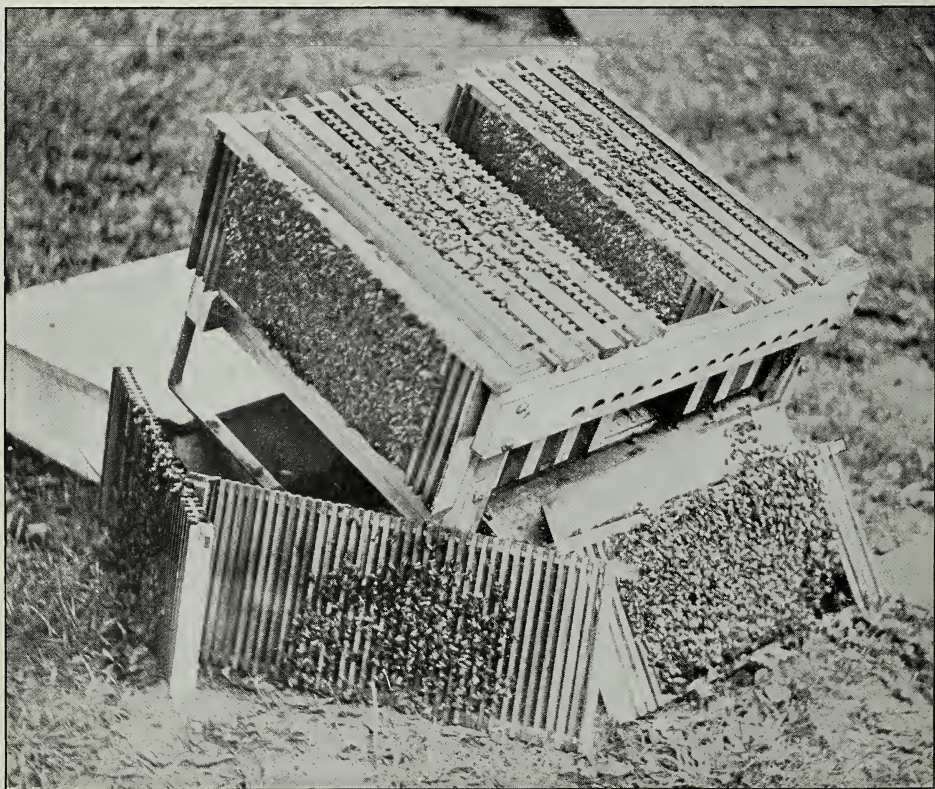


FIG. 3.—ASPINWALL HIVE DISSECTED.

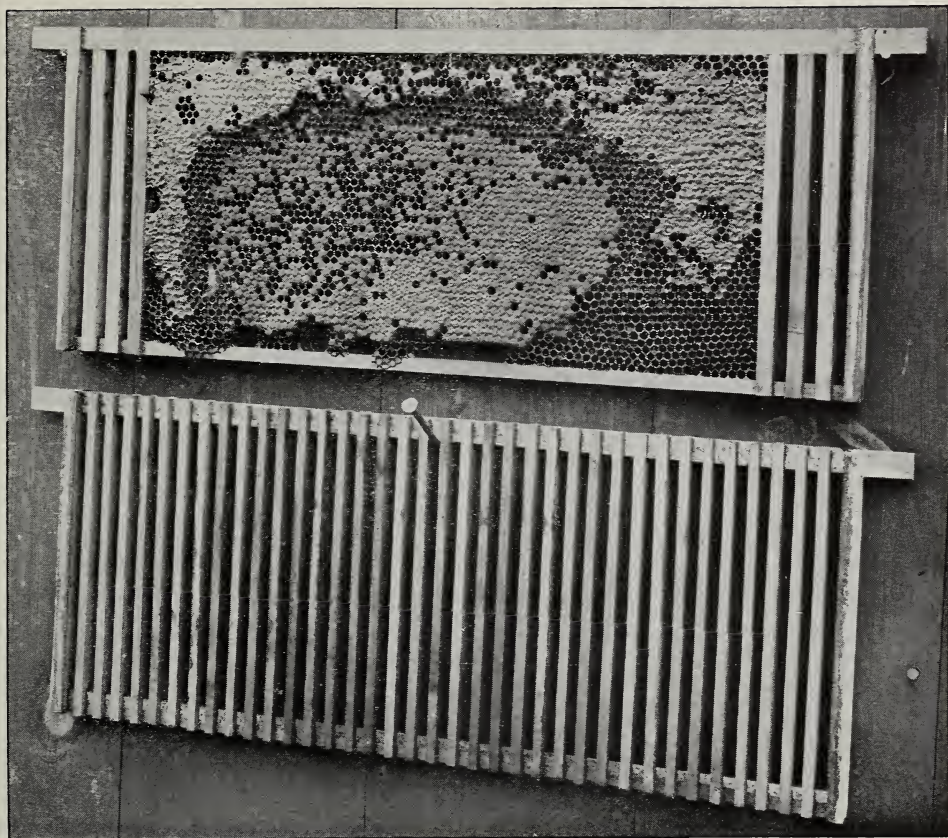


FIG. 4.—BROOD-FRAME AND SLATTED DIVIDER.

soon as it was ready for market, provided, of course, the preliminary tests were satisfactory.

This hive is not yet for sale, as Mr. Aspinwall wishes to test it carefully before it is put on the market.

BEEES OF CEYLON.

BY C. DRIEBERG.

You may be interested to know that bee-keeping (*albeit* in a small way) has been started in Ceylon. We have, as you are no doubt aware, three indigenous honey-bees worth mentioning.

1. *Apis Indica*, the common bee.
2. *Apis dorsata*, a large form.
3. *Apis florea*, the smallest of the three.

Apis Indica has for a long time been under partial domestication, and is commonly induced by the natives to build in round earthenware pots. The gathering of the honey is done after driving the bees out with the aid of smoke. In nature these bees build in the hollows of trees. Of late, attempts

(more or less successful) have been made to keep them in frame hives of suitable dimensions, but the quantity of honey stored is most discouraging.

Apis dorsata has been referred to as "the giant bee of the East." It builds truly gigantic combs in the open, generally dependent from the branch of forest trees. Mr. Benton considers these bees very promising, both as honey and wax producers; but up to date no one has succeeded in housing them for any length of time in a frame hive, and their reputation for fierceness has not favored the repetition of experiments. The honey is sought after as a medicinal agent, and collected only by the boldest of bee-hunters.

Apis florea is a gentle bee which constructs a delicate white single comb, generally built round the twig of a tree. The quality of the honey is perfect. Owing to the habit of building single combs in the open, these bees can not be induced to take to frame hives.

I should much like to know whether the above-mentioned *apides* are found in the Philippines, and whether any thing has been done by the U. S. Agricultural Department to utilize their produce.

Some time ago I heard of Prof. Benton's intended visit to your New Colony (and we were hoping to catch him here *en route*), but have not heard of any results.

Within the past few years the Society has been interesting itself in bee-keeping in Ceylon, and the success of the West Indies has been a great incentive to us. So far, however, only half a dozen enthusiasts are persisting in their efforts to master the art of apiculture. The bee favored by us is the Italian—a great improvement on the excitable little *Apis Indica*; but under the new conditions of seasons, food, etc., its naturalization must, of course, take considerable time.

The question of suitable bee pasture is one which has yet to be settled. Our native bees depend chiefly on forest trees (e. g., *Terminalia belerica*), while among cultivated plants the cocoanut palm supplies abundant food material. I see your journal, and find much in it to interest me.

Colombo, Ceylon.

A SNAKE EMBALMED BY THE BEES.

BY WM. A. SELSER.

In opening up a colony of bees we found a bottom-board with a snake fastened to it, evidently glued there by the bees. I laid it aside in my hurry, and did not pay much attention to it, but a photograph was taken later, as shown in the engraving. The snake must have entered the hive while it was inhabited by the bees, and they killed it in some way and then glued it down to the bottom. The view should have shown the body raised above the board at some of the points, especially at Fig. 1, indicating that the snake was still writhing when it was fastened down.

Philadelphia, Pa., Aug. 29.

[The unwritten history of this must have been somewhat interesting, not to say tragic. His snakeship probably crawled into the entrance and there met a "warm reception;"

or to put it another way was stung to death. The bees, unable to remove the carcass, embalmed it—that is, covered it over with propolis. The hide of the average snake is so tough that it will resist stings of bees. Some years ago we "experimented" with some snakes in connection with Mr. J. M. Jenkins. The serpents were found in a yard. We drove them up to the hives. Although the bees attacked them with fury we could not see that the stings penetrated the horny hide. The specimen here shown must have had a vulnerable skin.—ED.]

CELLAR WINTERING.

Colonies Consume More Stores than Those Wintered Outside.

BY A. F. EILENBERGEN.

In wintering my bees last year I lost one out of 52, and that was my fault by not putting in a young queen. I knew the queen was old, but thought I would chance it. I shall requeen every year, and not keep any over two years. I put nine colonies in my cellar to try it. I have as good a cellar as can be found for the business. The temperature did not get lower than 40 nor over 48 degrees, with good fresh air all the time. As for results, the ones in the cellar ate the



A PROPOLIZED SNAKE FOUND ON THE BOTTOM-BOARD OF A HIVE.

most. Not one of them came out as strong as those outdoors. The only benefit I can see is that if there are any light colonies in the fall they may be fed a little early if they are in a cellar; whereas, if they are outside they stand a chance of spring dwindling and breaking their cluster oftener. But I will not put any more in the cellar. If there is an outside case, plenty of room for late

brooding, the brood-chamber arranged so the bees can get to the honey, and a good young queen, they will winter outside in better condition than in the cellar. I put one-inch blocks between the brood-chamber of one colony and the bottom-board, so the wind went between the bottom and frames, and the hive is full of bees to-day. I let them have 19 lbs. of honey, as nearly as I could weigh it. Understand, I had an extra case to the bottom of the hive, and four thicknesses of carpet and one of burlap, and had one frame on one side of the hive with carpet instead of honey or comb. The frame of carpet collects the dampness. I wintered these on 7 brood-frames of honey and dry comb, 16 inches from ground.

You may think this is a queer way, but it works well. Another thing, I give all of them a large entrance in winter, just so mice can not get through. I have four colonies up from the ground 25 to 28 ft., and they have the same entrance they had all summer, and larger colonies can not be found to-day in an eight-frame hive and no outside case on them.

North Tonawanda, N. Y.

BEE-TREE HUNTING.

Is it Necessary to Cut the Trees? a Reply to John R. Lockard.

BY RALPH F. FISHER.

Friend Lockard, p. 322, March 1, made unfavorable mention of the sulphur (necessarily used in my practice of extracting bees and honey from trees, etc.), as being in every way primitive, and that conscience should prevent any further destruction by its fumes.

Now, I use sulphur because it is wise to do so in following my instructions, p. 998. A fully developed Italian queen is introduced into a one-frame nucleus; and as I wish the results to be all that is desired it would be downright foolishness to allow the queen inside the tree one slim chance of meeting her rival outside.

Here I will say the queen inside the tree is not likely to come out at any time, as she generally clusters with the last bees of the colony, and gradually starves to death. However, if the hole or entrance in said tree is next the starving queen and brood, and the cluster already trapped outside has gone to work in the furnished hive, it is very probable the fanning bees before the hive entrance and next to the Porter escape will entice the queen inside to join those outside. This may happen; and as a meeting with the Italian queen is to be avoided, sulphur is used to prevent this very thing; but if no distinction is to be made between the two queens, sulphur can be dispensed with. As she will not come out in any case so long as there is hatching brood present, the tree may be left fully two weeks after attaching the escape.

It is not necessary to wait five or six weeks, as mentioned in my previous article, because

the brood will be hatched into young bees in ten to fifteen days; but as I have always had the time I was never in a hurry.

Friend Lockard considers his experiences rather successful with a fair profit, yet the method I use will give him twice the honey and three times the bees, with one-tenth the trouble in like circumstances.

Great Meadows, N. J.

[Mr. Fisher is the man who showed how to get bees out of a house or bee-tree without cutting the tree. We can scarcely see how there could be any thing about the method that would indicate cruelty to animals.—ED.]

DOES IT PAY TO RAISE QUEENS TO SELL?

BY N. E. CLEAVER.

Yes, it pays if you are willing to accept the pleasure of an occupation as the pay for your labor in it. It reminds one of the prayer that is often heard in the churches, that the Lord will give the faithful pastor many souls for his hire. But it takes money to live on. And if the queen business is to be considered from the standpoint of dollars and cents, then I think I can prove conclusively that it does not pay. I have kept accurate accounts. I have advertised by "key advertising," and so know absolutely what results have come from certain investments. My advertisement in one paper has brought me far better results than any other, and so I will consider only the results from that source. My equipment was ample—one apiary of golden Italian bees containing about seventy colonies, with an expert queen-breeder in charge; one apiary of Banat bees containing 36 colonies; 5 imported breeding-queens, and myself in charge of rearing the queens. I have filled all retail orders received except five; they contained the directions "please send by return mail." They came at a time when I was behind with the orders, and so the money was returned to the senders. I filled several large wholesale orders for golden Italian queens at exactly what I paid my man for rearing the queens, so the question of profit or loss will not take such orders into consideration. I also leave out of the account the cost of rearing the golden Italian queens which were sent out at retail, by taking that cost from the total received; and I have left, as the result for the season of 1907, for Banat and golden Italian queens, sold at retail through my advertisement in that one paper, \$146. I spent half a day each week answering letters, mailing queens, grafting cells, etc.; during the queen season I answered 241 letters. My expenses for advertising were \$38.68; \$9.00 for postage on letters and queens; \$4.00 for cages; \$31.00 for imported breeding-queens. About two-thirds of this latter item, I think, should properly be credited to the present account, making a total expense for the season of

about \$72.00, leaving me as pay for the season's work and investment about \$74.00.

Now you will say, "Why, it did pay after all. It paid big. It paid 100 per cent."

But, wait a little. I have used 18 Banat colonies, and worked about six full days. On the other 18 Banat colonies I have put about a day's work all together, and have taken off \$90.00 worth of honey. I have divided the colonies, and would not take \$90.00 for the bees and queens without the hives in these new colonies; but to make it low enough we will call the increase worth \$50.00, making \$140.00 income from the 18 Banat colonies. If I had not been in the queen business, and had worked the whole Banat yard for honey and increase, I should have saved five day's work and earned \$66.00 more. So when I am asked if it pays to raise queens to sell, I answer not, in dollars and cents, at present prices. But in addition to that I must confess that raising queens is one of the most interesting side-occupations of which I have any knowledge.

Emporium, Pa.

cold is not so severe as outdoors. During the very coldest part of the weather, in the absence of a cellar the difficulty may be overcome to a certain extent by throwing straw over the entrance to shut out cold drafts—especially so if there be a high wind at the time. In any case, it is always important with outdoor colonies to keep the entrances contracted down very small, cleaning them out occasionally; for if they become clogged with dead bees the colony is likely to die.

You say that you had not lost a colony this way before. That is probably due to the fact that you had not previously experienced such a severe winter.

After a very cold winter we find in our experience that there will be perhaps ten per cent of the outdoor-wintered colonies that have literally starved to death with stores within an inch and a half of the winter-nest. The same condition has been reported by others. We know of no remedy except as above pointed out.—Ep.]

DOES A HONEY-BOARD RETARD THE PROGRESS OF THE WORKERS? LIQUEFYING HONEY.

Friend Root:—Replying to queen-excluding zinc retarding the workers and allowing an occasional queen to pass through, I beg to say I have used it for years and I have the first queen yet to get through it. Where they do go through, there certainly must be a slight dinge in the zinc. It would be necessary for a dinge to be only *very* slight to let a small queen pass through.

I have never been able to detect any retarding of the workers. I had one colony last summer that stored 125 lbs. in three extracting-supers in two weeks from hiving over a queen-excluder. I should like a lot of this kind of retarding next season.

In regard to liquefying honey in 60-lb. cans, page 385, I would say that, after putting the can in the water, you must remove the cap and press the top of the can down to the honey by striking the top of the can with the palm of the hand, thus forcing the air out; then put on the cap and screw down tight; leave in the water until it is all liquefied, then remove and let it stand until cold before removing the cap, and you will have no overflow, no burst cans, no foam, and no loss of aroma.

ELLAS FOX.

Hillsboro, Wis.

TWO QUEENS IN A HIVE SEPARATED BY A DOUBLE ZINC DIVISION-BOARD.

I should like to know if there is any fault to find with perforated zinc division-boards in the center of a hive to separate two laying queens, so the workers can get on each side of the hive. In case the queens climb up the single screen and fight, it can easily be avoided by putting two sheets of zinc on a frame with a half-inch air-space between. In this way I don't see why two laying queens can not be kept in a hive the year round. Two good laying queens in a hive are enough



BEEES STARVED IN WINTER WITH HONEY IN THE HIVES.

I had the same conclusion forced upon me as did Mr. Hutchinson, as mentioned in the June issue of *The Bee-keepers' Review*, but my bees were snugly packed in extra winter hives with fine hay on the sides and planer-shavings on top to a depth of five to six inches, and still mine starved with honey in the hive; but they would not break cluster about the small patch of brood. I had not lost a colony this way before, and counted it a safe way of wintering.

C. J. THIES.

Pepin, Wis., July 17.

[During a severe cold winter, during which the thermometer plays around the zero-point, and remains there for ten days or two weeks, you will be quite likely to find exactly what you describe, in some of the outdoor-wintered colonies. While protection, and plenty of it, provides against this difficulty to a very great extent, it does not entirely; and where there is a prolonged zero spell we would advise taking the colonies into a cellar so that they can expand the cluster before they actually starve. When the cluster spreads it will move over to the food; then when hunger is satisfied it gradually contracts, when the hive may be moved out again; but it will do no harm during very severe weather to keep all such colonies confined in a cellar or in an atmosphere or temperature where the

for any eight or ten frame hives. A bee-keeper who has two queens in a hive and is not satisfied with his queens had better kill them and get a new strain of bees.

MRS. WM. R. MILLER.

Cambridge, Mass., Sept. 8.

[The two-queen system with the perforated zinc, as suggested in your letter, is now a practical working success—at least we have had so many reports showing that two mothers can be kept in hive successfully when separated by a perforated zinc, during the important breeding season at least, that we may conclude the thing is no longer a theory or a possibility but an actuality. There may be times when a double zinc will have to be used; for we have had one report, possibly two, where the two queens would fight through the perforations, with the result that one was killed.

It is not yet proven that the two-queen system in connection with perforated zinc will work in the off season of the year—that is, when brood-rearing naturally ceases, and there is a tendency on the part of the bees to rob. Some reports have seemed to show that one of the queens will be missing.—ED.]

THE TWO QUEEN SYSTEM; DISTANCE THAT BEES CAN FLY; CAUCASIANS SHORT-LIVED.

I have been experimenting some with two queens to the hive this season, and I like it, as I can keep my colonies so strong; but I use two bodies with excluders between them. I now expect to use very wide bodies, with a queen on each side separated by a queen-excluding division-board.

I have also been experimenting as to what distance bees will carry nectar. I live in the city, and it is one and a half miles to the cotton-fields, and I am harvesting a fine crop of pure cotton honey. We have had the poorest season here up to four weeks ago that I ever saw; but I shall get an average of from 75 to 100 lbs. per colony from cotton, although but very few bee-keepers around here will get any thing, as they have only black bees, and they are not able to get any honey from cotton at all.

I bought several Caucasian queens last fall, and not one of them is alive now. They did not seem to be able to stand their hand with the Italians this poor season; and what puzzles me is that every one of the queens I bought has been superseded. I like the gentle part of them; but if they live only six months I don't want to bother with them.

Spartanburg, S. C.

W. M. BAILEY.

BEES ROB FOUL-BROODY HONEY IN GROCERIES AND GET THE DISEASE.

I shall have to give up my bees here, as foul-brood comb honey is bought by the grocers, and exposed at their front doors. My bees sip it and get the disease. This occurred four years ago this last spring with a lot of Cuban honey, and I have had trouble ever since. I have destroyed in that time prob-

ably \$150 worth of hives and fixtures, and it is in my yard now, with possibly not over three or four colonies free from it, and they will likely take it before the honey season is over. I used the McEvoy system and also ized in trying to cure it, but shall have to drop bee-keeping for the present.

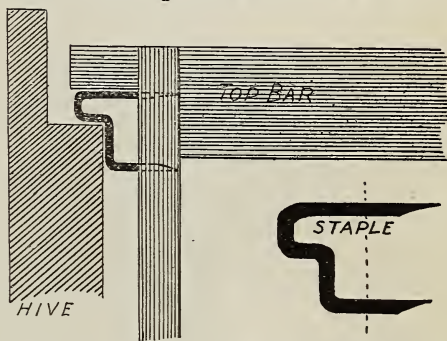
Blairsville, Pa.

W. D. KEYES.

FRAME-STAPLES INSTEAD OF RABBIT TINS.

Being troubled with propolis in the rabbit I was forced to try for a remedy. The result is shown by the inclosed sketch. So far as one season on one hive can prove, it is a success. It seems to me the tins are no longer a necessity. I wonder they were not discarded years ago by means of something simple.

You will see by the sketch there is only one staple as before; but it does away with the necessity of the tins, and allows more room for the fingers; also relieves the strain



on ends of the top-bar; gives free bee-space all round and under the ends, and the end-spacer also, keeping every thing absolutely clean.

JOHN BELL.

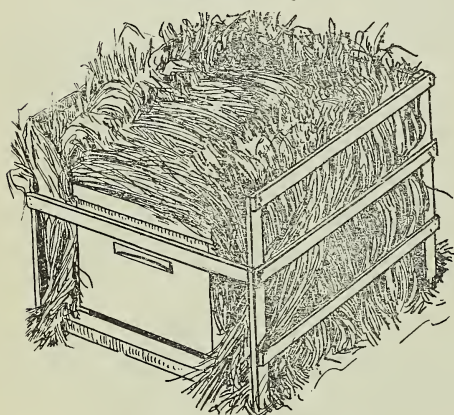
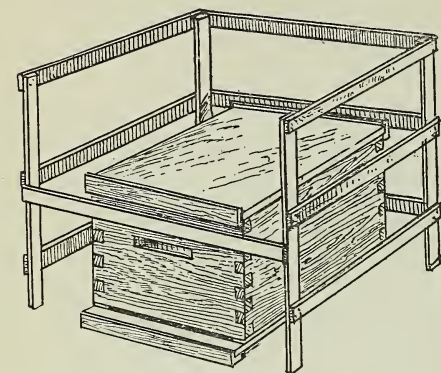
Greenhithe, Auckland, N. Z.

[The same general arrangement has been before illustrated in these columns. There are some good features about this form of staple, but it has one or two defects. First, if it be used with a non-spacing frame—that is, a frame without any side projections—the staple will act as a pivot and the frame will swing like a pendulum. If the staples are not exactly placed, the frames will hang against each other and leave spaces too wide at the bottom. Practically, such a staple would have to be limited to the use of self-spacing frames; and unless it were used with a tin rabbit, lateral movement would be very much impeded because the staple would crowd propolis before it on the wood rabbit in a way that would make frame-handling very unpleasant as well as difficult.

You say so far, one season, the device is a success. Probably propolis will not be accumulated in one year's time to cause any trouble with the arrangement; it is only after several years that you would begin to notice trouble; and if propolis is deposited so badly that the tin rabbit is filled up, your arrangement would make confusion worse confounded the second or third season.—ED.]

PACKING HIVES WITH STRAW.

To pack my bees I make a frame similar to that shown in the cut. When this is set over the hive, 4 or 5 inches space is left on



the sides and back I pack straw in this space, leaving the front open as shown.

Hull, Ill.

HENRY NYE.

[This arrangement we would consider to be very bad, unless the straw could be kept dry by some sort of roof. As here shown it would hold water, and freeze. The straw *can be laid to shed water.*—ED.]

DUAL PLAN OF INTRODUCING; THE CAGED QUEENS DO NOT LIVE.

You say you have caged virgin queens in small nuclei, to be released when the other queen is ready. What kind of cage do you use, and what kind of feed? I find a great many queens dead in cages, even in queenless colonies. Hatching out cells, queens die in 48 hours.

Milroy, Pa.

A. H. KANAGY.

[The kind of cage and the kind of bee-candy are not important. We use the ordinary introducing-cages and what is known as the Good candy—a food prepared by mixing powdered sugar and honey into a stiff dough.

In order to make this dual plan of introducing a success, the second queen should not be caged more than two days prior to the removal of the first one. In our early experiments we succeeded in working this dual plan by putting queen No. 2 in a short time after No. 1 was placed in the hive; but we afterward found that this necessarily made too long a confinement for No. 2. Under normal conditions one can easily determine when No. 1 will be ready to lay. If he knows her age, and if he looks her over before caging No. 2, he can tell about when she will begin to lay. He should then plan to put in No. 2 about two days before No. 1 is taken out.—ED.]

HIGHER PRICES OF HONEY.

Now of all the times is the time to boost the idea of higher prices for honey. The crop is short, and the pure-food law is in force now. If the honey-producer doesn't "ask," who will? Honey production to-day is a science. An intense and continued study is needed to keep pace. The same study applied in any thing else would be considered a profession. Honey ought to be paid for. There is no package on the market to-day (as slightly as a section of honey) that sells as cheaply. Great cleanliness and care must be given to all forms of honey; and it ought to bring the price, and would, if bee-keepers in general would think so. Instead of making it compete with the cheapest food products, even with glucose, raise the standard and the price. Every thing else has. Why not honey?

M. C. LONG.

Kansas City, Mo., Aug. 19.

GOLDEN ITALIANS STAND THE SPRING BETTER THAN THE HYBRIDS OR BLACKS.

It has been stated that the all-yellow bees do not winter as well as the blacks or the dark-colored bees, and that they would dwindle worse in the spring. I am rather inclined to think this is a mistake. Last spring, which was the worst one in twenty years for bees, I had the all-yellow bees alongside of hybrids and blacks. My all-yellow bees were far ahead of any thing else I had. They were raising brood, and getting along finely with but little feed. I fed the same amount to the black or dark bees, and they raised no brood, and were at the point of starvation all the time.

CYRUS LAFOLLETTE.

Craig, Ohio.

THE A. I. ROOT CO.'S EXHIBIT AT THE OHIO STATE FAIR.

The A. I. Root company of Medina, O., had one of the finest and most attractive exhibits we have ever seen on the grounds. The exhibition of bees in observation cases was catching and of much educational value. Apparatus and other materials of interest made up a unique exhibit, in the center of which was a monument designed out of beeswax.—*American Agriculturist* for Sept. 14.

SWEET CLOVER WINTER-KILLING, ETC.

In palliation of my remarks concerning sweet clover, page 1098, I wish to state that perhaps only one-fifth of the area that I have in sweet clover was killed by the frost. While there are but very few fields of red clover here in Grant Co. but were entirely destroyed by the severe winter of 1906, I think it safe to say that sweet clover can stand more heaving of frost than either red, alfalfa, or alsike clover. Yes, my sweet clover grew this summer from 3 feet high to—well, the tallest plant was 8 feet high, and that on pure clay ground. There were large flies, wasps, hornets, and numerous other insects on the fragrant bloom, and among them the bees with their merry labor-song.

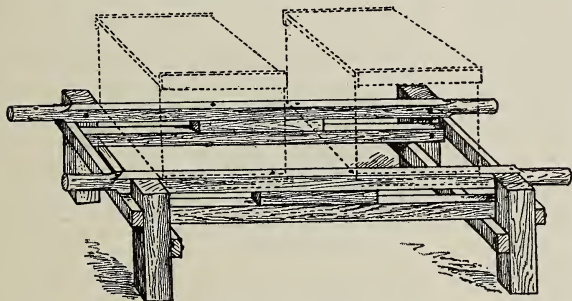
Jonesboro, Ind.

C. A. NEAL.

A DOUBLE HIVE-STAND AND CARRIER.

I am using double hive-stands constructed as shown in the cut. For three hives I make the side rails longer and heavier. The form of construction gives a wide base, but makes the top about right for the length of hive.

In handling frames they can be set down on the stand between hives. If the upper edge of the side rail is sharpened, killing bees is reduced to a minimum. Solid side rails can be used, cut for handle at end, and the end pieces nailed as above for bracing.



The first I made have both side rails 42 in. long, with the outside end-piece $2 \times \frac{1}{4}$ nailed even with the top of the leg. I used oak, but I think poplar or pine would do as well, and would be lighter.

Belpre, O.

C. C. MILLER.

[The carrier as here shown is too heavy and clumsy. It should be made much lighter.—Ed.]

QUEENS DID NOT FIGHT WHEN ACCIDENTALLY PUT TOGETHER.

While examining some Carniolan bees I made the mistake of returning one frame with the queen to the wrong hive; and not until the next day when going to the hive for larvæ did I discover the error. The two queens seemed to be at peace with each other, and the bees with both. I could not see why one queen was not killed at once, but neither was balled. I don't think this plan of plurality introduction would work again, but I will try it on some other queens. The bees

were in a fairly prosperous condition at the time, and getting honey every day. The queens were separated at once, for I did not want to risk the life of either.

Parma, Idaho.

H. E. CROWTHER.

THE ALEXANDER PLAN FOR WEAK COLONIES A SUCCESS.

I have tried the Alexander plan of building up weak colonies, without the loss of any. Instead of the wire screen used by some I used mosquito-bar with good success. With two colonies I did it "plain," without the extra screen, with equal success. In one case after the weak colony had been placed on the strong one five days I put weak colony No. 2 on the first, and all is going lovely. The bees from each of the three queens are using the same entrance. I believe the number of colonies that may be tied in this way needs to be limited only by the amount of recruiting bees.

E. S. ROE.

Clarissa, Minn.

A WELL-VENTILATED BEE-CELLAR; FOUR SUB-EARTH VENTILATORS AND ONE IN A CHIMNEY.

I have made a honey-house and bee-cellar combined that is 24 ft. long by 12 wide. The part above the cellar is for my working-room and honey-house. The cellar, which is under all, is for the bees in winter. A cellar-way is at one end, while a chimney built at the middle of the other end starts at the bottom of the cellar, with an opening near the floor for ventilation. There are two holes on each side of the cellar, communicating with tile lines that run out from 12 to 15 ft. These are about 18 feet apart. There is also a tile drain. The cellar wall, which is 12 inches thick, extends 5 feet into the ground, the dirt at the surface being banked up on each side about two feet or more. The wall is made of stone and cement.

Around the inside of the cellar is a shelf 2 feet wide and 18 inches high, this and the cellar floor being covered with cement.

I put 56 colonies of bees in the cellar in the fall of 1905, and in the spring took out 54 colonies in good condition. The two that died did not have enough stores. Last fall I put 105 colonies of bees in the cellar, and this spring took out 105 colonies. My hives were so full of bees that I could not double them up very much. There was plenty of honey left, and brood was hatching in many of them.

GEO. J. FRIESS.

Hudson, Mich.

FEEDING BEES THAT ARE CONFINED IN A CAGE.

When bees are confined in a cage or box the under side of which is of wire cloth, they can be fed (as some have already suggested) with honey as long as their tongues can reach

it. My way is to fill the receptacle with syrup; press a sponge down in it, and all the syrup will be appropriated—you would be surprised to see in how short a time, as the sponge presses against the wire, and the weight of the bee-box of whatever kind holds it down. It works finely.

Johnstown, Pa.

MARY E. AKERS.

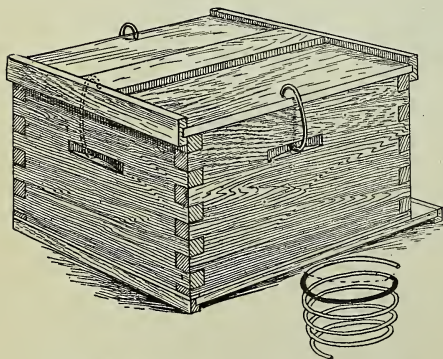
HIVE-LIFTERS.

Of late there has been some discussion in GLEANINGS about hive-lifters. I suggest a tripod with a lever across the top, a grapple something like ice-tongs attached to the end of the lever to hook into hand-holes in the end of the hive. The lever must rest on a pivot so as to swing from side to side. The tripod and lever can be made of light strong material so as to be easily moved from hive to hive as work requires.

Cardenas, Cuba.

S. LEE STILLMAN.

[It would seem as though a lever used for a hive-lifter would be harder to manipulate than the self-locking rope-and-tackle arrangement described by Mr. J. E. Hand on page 1026 of the Aug. 1st issue; for such a lever, in order to have power enough, would have to be quite long; and, when lifting hives, the operator would be obliged to stand at the end of the long lever away from the hive. With Mr. Hand's lifter, one hand manages the rope—raising, lowering, or holding the hive in any position while the other is left to manage the clamp or perform any necessary operation about the hive. However, in some places a self-locking tackle may be hard to obtain, so that a lever will have to be used. —ED.]



SPRINGS TO HOLD COVERS ON HIVES.

We use sections of old sofa-springs cut in suitable pieces as clamps to hold on covers of hives.

T. T. GROSS.

Janesville, Cal.

YELLOW SWEET CLOVER.

I got from you some yellow sweet clover and some white in the spring of 1906, and sowed it on the banks of a large dredge-ditch. The white did nicely, but the yellow came up and grew about six feet high and blossomed matured seed, and stayed the

first year. This year some stalks came up and did the same thing. The stalks were small and spindling, and the blossoms very delicate. Is it an annual or a biennial?

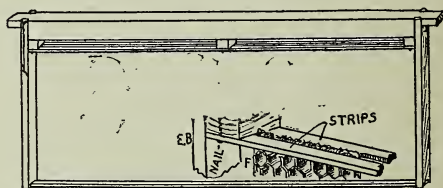
HENRY STEWART.

Prophetstown, Ill., Oct. 15.

[Friend S., we have had one or more reports similar to yours. I think the soil could not have been suitable for yellow sweet clover; but at the same time it is more likely to blossom the first year than the white. We shall be glad to get the experience of others with yellow sweet clover.—A. I. R.]

A FRAME WITH A DOUBLE TOP-BAR.

I should like to see some older and wiser men in the bee business give their opinion on my frames as illustrated. The top-bar is the same as usual, only not so thick; and there



is a second one, a bee-space below it, made of thin stuff. This bee-space, just $\frac{1}{4}$ inch above the comb, enables the bees to pass more easily from one comb to another, and also takes the place of a bee-space on top of the frame when packing for winter. This $\frac{1}{4}$ -inch strip is ripped in the middle, making two pieces out of it. I nail one on, then place my foundation in place, press the other piece against it, and nail. This holds the foundation secure.

H. E. DUPLER.

Thomville, Ohio.

[Years ago the double top-bar was illustrated and described in these columns. At that time considerable enthusiasm was shown, and the Root Co. was seriously considering the adoption of a double top-bar in preference to one solid bar thicker and wider than the standards that then prevailed. $\frac{7}{8} \times \frac{1}{2}$. But the particular claim that was made in favor of this double top-bar was that the bees did not build burr and brace combs to it. We tested the principle, and found the claim to be on the whole substantiated; but because there were more pieces to handle, and because there was a question as to whether the average bee-keeper would be able to nail it up properly, we decided upon a frame that would be "fool-proof"—that is to say, could not be nailed up wrongly. While there was less of material in the double-top-bar frame, there was more labor in making it.

If the experience of the past is any criterion you will find the frame a very satisfactory one, although it is not necessary to have one thick top-bar and one thin one. Two bars $\frac{3}{4}$ thick, and separated $\frac{1}{4}$ inch apart, will give practically as good results, and at the same time save some expense.—ED.]



OUR HOMES

by A. I. ROOT

He which converteth the sinner from the error of his way shall save a soul from death, and shall hide a multitude of sins.—JAMES 5:20.

Cast thy bread upon the waters; for thou shalt find it after many days.—ECC. 11:1.

In our issue for Aug. 1, 1905, I told you about meeting a boy in our county jail, who, although seventeen years of age, could neither read nor write. Some of you may remember about it. His name was Ransom G. Murray, and the title of that Home paper was, "Out of the Jail into the Prayer-meeting." Over two years have passed, and I have been so busy with other cares, and a good deal of the time with other boys, that I had almost forgotten about Ransom. A few days ago, however, my oldest grandson, who is now himself nearly seventeen years of age, said to me something like this:

"Grandpa, do you believe it is worth while to spend as much time as you do with some of the boys, say Ransom Murray, for instance? He did not turn out very well after all, did he?"

"Why, Leland, it is not proper for me to get discouraged, even if the boys do not all turn out as well as I should like to have them. My duty is to lend a helping hand and do the best I can with them, and trust God for the result. What brought Ransom Murray to your mind just now?"

"Oh! nothing particularly, only he did not turn out very well, did he? He never united with *our* church, and then he finally ran away, and nobody knows what became of him."

"Yes, Leland, it is true he did not unite with *our* church; but I never felt much discouraged about that. He did unite with one of the other churches in our town; and, for any thing I know to the contrary, he did nothing particularly out of the way for a church-member."

"But he ran away, didn't he?"

"Yes, he ran away—or at least he went away without saying a word to anybody, and his friends were all greatly worried about him for quite a spell; but when he left us so suddenly he was not in debt anywhere. His board-bill and all others were paid up, and he did not even draw the wages that were coming to him. He did not even take away his trunk and clothing. Some time afterward he wrote from Chicago, and asked one of his friends to get his pay and pack up his clothing, etc., and forward it. This was done, and we have heard nothing from him since. In regard to his uniting with some other church than ours, I am rather glad he did. Let me tell you a little story. A great preacher was once going along the streets and took an intoxicated man by the hand

and lifted him out of the gutter. When he roused up enough to talk he said, 'Why, parson, don't you know me? I was one of your converts last winter.' 'Yes,' replied the minister, 'I think you must have been one of *my* converts; for if you had been converted to the Lord Jesus Christ you never would have got back into such a predicament as this in so short a time.' Now, Leland, if Ransom had followed *me* and united with our church I might have feared, as I often do, that the step was taken more to please me, the one who had befriended him, than because he truly felt he was 'born again.' When I learned, while in Florida, that he was going to another church, and had become a member of that church, I felt rather pleased than otherwise. In regard to leaving our employ in the abrupt way he did, it is true he finally became dissatisfied somewhat with the pay we were giving him; but as our people felt that he was getting all he was worth I suggested that he try working a while for somebody else. He did so, but did not stick to his job very long. Ransom had a peculiar disposition. He became uneasy when he was doing reasonably well and seemed to want to get out and see the world. Well, instead of being *discouraged* I expect to hear something good from the boy, even yet. Leland, did you ever hear the Bible text, 'Cast thy bread upon the waters for thou shalt find it after many days'?"

He replied that he had. When asked if he knew what it meant to cast bread upon the waters he said he did not. Then I replied:

"Well, it means that we who are followers of the Lord Jesus Christ should lend a helping hand, right or left, doing good every day as we have opportunity, without questioning whether it is going to pay or not. It is our *duty* to do it. That is what the Bible means where it speaks of casting our bread upon the waters. Now I think you know what the latter part of the text means without my explaining it, do you not?"

"Why, I suppose that it means that some time after—may be a long time afterward—you will find out or hear from somebody that what you did amounts to something after all. But do you expect to hear from Ransom?"

"Yes, I hope to hear something good from him. And since you have reminded me of him I will try to remember to pray oftener for him as well as for these other boys I have helped. But how do you come to know so much about what I did for Ransom, anyway?"

"Why, grandpa, don't you remember? I went with you one Sunday afternoon when he was in jail, and I heard you talk to him and to the rest of the boys in the jail."

After the above conversation I did pray for our young friend Ransom; but I am afraid I did not pray with very *much* faith, after all, for it was a great surprise when our youngest daughter, in New York city, forwarded us a letter she had received from Ransom. Before giving you the letter, however, let me explain that when I told the folks at home about Ransom, that he could

not even write his own name, our daughter Carrie, who had been several years a teacher, especially in the mission fields, volunteered to give him some instruction. Ransom, however, did not make very much progress. He explained his lack of education by saying he had a fall when he was a child, and injured his head. There was a doctor who said there was no use in sending him to school—he was not like other boys, etc. Carrie admitted that he seemed to be rather peculiar, and said it *was* a hard matter for him to concentrate his mind. She succeeded, however, in getting him to read so he read that one verse in the Sunday-school lesson that I told you in that story long ago. Well, now, here is the letter that Ransom wrote to his old friend and teacher:

My dear friend, Miss Root:—As I have not heard from you in over a year I thought I would write and see if you were still in good health. I should like to hear from you and your folks, as I am longing to hear from my Ohio friends with whom I used to have so much pleasure. I am many miles away from them all, but I have not forgotten them. Since I left there I have seen lots of the country and some of the wild and woolly West. I spent the last part of last summer in South Dakota. It was about 30 miles between houses. I spent the last nine months in Nebraska and Colorado. I spent three months in Denver. I am at present working in Havelock, in the C. B. and Q. shops. Havelock is seven miles from Lincoln and thirty-two from Omaha. The work is all piecework. I am making all the way from two to three dollars a day. I am working as a boiler-maker helper.

As it is about church time I shall have to close. Please write and let me know all the news from the shop and from all the rest of you.

Hoping to hear from you soon I remain

Yours truly,

R. G. MURRAY.

Havelock, Neb., Aug. 25.

Now, the above letter was quite well written for a boy of eighteen or nineteen; but what surprised me most was that there was not a badly spelled word in the whole letter; and it really *was* one of my "happy surprises." Ransom does not tell us very much about how he is holding on to his religion; but he does say, "It is about church time." I might think that he did this because he thought it would please us, and that, maybe, he is not attending church very much after all. But this thing is certainly true: The boy who could not write nor read well enough to sign his own name now writes a very fair letter; and the letter gives evidence all the way through that he has been growing in wisdom and in grace. May the Lord be praised that this little bit of casting our bread on the waters brought such a crop. Come to think of it, more is due to Carrie Bell than to myself, for I think she spent much more time with him than I did. When I found Ransom there in jail he had commenced already at the age of seventeen to steal rides on the cars and going about with a circus or show, and was in a fair way to turn out a tramp and perhaps a criminal. Just a little effort on our part started him in the better way.

Once more, this little letter helps to bring out the wonderful beauty and encouragement and inspiration there is in the words of our first text: "He which converteth the sinner from the error of his way shall save a soul

from death, and shall hide a multitude of sins." Who knows, or who can compute the trouble and expense to our nation that is saved by turning just *one* boy away from bad habits and vicious ways?

Before closing I wish to say just a word about that statement from the doctor that Ransom could not study because his head was injured. There is quite a little of that sort of talk going on. A certain boy thinks he can not get an education because he is not "built that way"—that some boys are born to be scholars, and some are not. My friend, do not believe a word of it. It is a suggestion of Satan. Along the same line a young man tells you he inherits an appetite for drink and tobacco, and it is the fault of his parents and not his own. Such suggestions come from the prince of darkness—from Satan himself. If it is true that some of us are handicapped in some respects compared with others, God has given all a chance. When I was at school I learned very easily. I loved books, and could master them without very much hard work. Now, the truest friend I have in this whole wide world was unlike me in that respect. It was hard for her to get her girlish ideas pinned down to her studies; and she says she did not make as good use of her time as she might have done when her parents labored hard to keep her in school; but when she had some boys and girls of *her own* she began to appreciate what she had missed; and her determination that *her* boys and girls should go to school and improve their time was almost a fierce one. She was so set in giving the children an education that she went over their lessons with them and followed it up for years, and in this way made up for what she neglected before she was married. For a good many years I began to think myself greatly her superior in point of education; but after our five children had grown up and been piloted through their lessons (even when they went *away* to school) their indefatigable mother had got to be ahead of myself in many points of education—especially a good common-school education—and she began to straighten *me* up, not only in my talk, but in my writings here in these pages. Mrs. Root has always been a *worker*; and although she is now toward seventy years of age she is a worker still; and with the multitude of periodicals we have now in such plenty she keeps abreast with pretty much all that is going on in this world of ours.

Now a word more about people who are prevented from getting an education by heredity or some physical trouble or something of that sort. When I last visited my sister in Manistee, Mich., she gave me a little tract that said on the outside of the cover, "Directions for Beginners in Practical Christianity, with Six Days' Course of Treatment." I wish to give you the "treatment" for just one day:

MONDAY.

[DENY]—I deny the belief that I am a child of the flesh and must suffer the sins of my forefathers "even unto the third and fourth generation." Perish all such ignorant claims.

I deny that I inherited from my ancestors lustful passions and sensual appetites.

I deny the belief that the race can reflect upon me lustful passions and sensual appetites. I deny the belief that those with whom I associate can reflect upon me lustful passions or sensual appetites. I deny my own ignorant belief in such erroneous ideas.

[AFFIRM]—God is spirit, and I—the divine image—am spirit. I am born of God—God is too pure to behold iniquity, and I am, therefore, pure being, without a tinge of lust or passion.

Now, even if the above does smatter a little of Christian Science I believe it is, in some respects, true. That is, even though we may be handicapped to some extent by the sins of our ancestors, we may, through Christ Jesus, rise above these hindrances and finally triumph over sin and Satan.

May the Lord be praised that it is our privilege in the pathway of life to lead others out of darkness and unbelief into the light of the gospel of Christ; for in so doing we shall "save a soul from death, and hide a multitude of sins." Therefore let us not be weary, but let us continue casting our bread upon the waters, having faith that the great Father of all will be able to find it after many days.

Permit me to close this Home paper with a kind letter that came while I was preparing to dictate these words:

OUT OF THE DARKNESS AND INTO THE LIGHT.

I never wish to be without GLEANINGS in my home as long as it holds to its present attitude for righteousness. It is eagerly sought for by all members of my family every time it comes and the Home articles written by A. I. Root are one of the principal agencies in making me forsake a life of sin, and led me to the feet of my blessed Redeemer. May the Lord be praised for his life and the good he is doing.

Mattoon, Wis., Oct. 19.

MYRON H. HILL.



GRANULATED SUGAR; ITS EXCESSIVE USE BY THE AMERICAN PEOPLE.

For years I have avoided sweets as much as possible—especially things sweetened with cane sugar; for I have found that for me such things are unwholesome. At home Mrs. Root cooks all sorts of fruit, especially for myself, without the addition of sugar; but when I am away from home, of course I take what is set before me. A great many times I just taste my sauce and fruit because I dislike so much sugar. The principal reason is, however, that it is sure to impair my digestion. When I feel hungry for something sweet I take it in the form of sweet fruits. I am sure the fashion of giving our children so much candy, and, worse still, sweetened drinks at our soda-fountains, is responsible for the fact that even our children have to be drugged and doctored. Maple sugar seems to agree with me much better than granulated sugar. Just recently, however, I was laid up nearly all one day as a result of eating, say, a table-

spoonful of maple syrup and hot cakes for breakfast. If I let sugar and sweets alone I get along very well, and pride myself on being in excellent health for a man of my age. Honey I find rather better than sugar; but unless I am going to have some vigorous exercise outdoors I am compelled to give even honey a pretty wide berth. This matter was brought to mind by the following letter:

Mr. Root:—A leaflet came to us a few days ago entitled "The Dietetics of Sugar." It is sent out by the Sanitas Food Co., of Battle Creek, Mich. For all who are interested in a better mode of living it would be of inestimable value; and if you have not seen one I should be glad to send you this one. I think the entire article should be published in all bee-journals, and let all bee and honey people see that their local papers have a copy of it, and induce them to print as much as possible of it. It would certainly be a great advertisement of honey.

San Antonio, Tex., Aug. 28.

J. H. CALKINS.

Perhaps our good friend is putting it rather strongly; but after reading the booklet mentioned I should not wonder if he were pretty nearly right. Just try cutting off some of the sugar, friends, and see if you do not feel better; and especially avoid putting sugar in your coffee—that is, if you must drink coffee. If you are subject to headache, sour stomach, etc., try cutting off the sugar.

LIVING TO BE 120 YEARS OLD.

There is a department in the *Sunday School Times* that I think is headed "A Business Man's Talk to his Class." Whether I have got it right or not, there is more common sense packed into a few sentences in it than almost any thing else I ever got hold of. In studying my Sunday-school lesson a few weeks ago I clipped out the following. See what you think of it:

His eye was not dim, nor his natural force abated.

That is what he got for living in the country-side out among the hills. Moses kept his own laws—"took his own medicine," as you fellows say. The way to keep young is to keep from getting sick; the way to keep from getting sick is to take Moses' preventive. Here's the formula which God gave him, and there's no patent or secret about it (Exod. 15:26). The next thing to do is to fall in love—with God's out-of-doors. Then let somebody else do all your worrying for you (I. Pet. 5:7). No reason why all of us should not be young at 120 also. Moses did not smoke cigarettes, nor breathe coal-smoke, street dust, and sewer-gas, nor break all the laws of hygiene, nor abuse his stomach with late suppers and swell cookery. Country skies, plain living, high thinking, and all aboard for Hundred and Twenty!

I thought at first, friends, that I would hunt up and quote the references from Exodus and First Peter; but if omitting some of the reference will induce some of you to get your Bibles and hunt up these texts I think more good will be done. I want you to see how much biblical authority T. B. Terry and myself have for our vehement plea for pure air, pure water, and such food as God intended for us.

A HOME-MADE "SWEAT-BATH" CABINET, ETC.

As I read GLEANINGS every month I have become much interested in your health notes, etc., and could not resist the temptation of giving you some of my experiences along the same line. About fifteen years ago my wife was visiting a doctor friend in Cincinnati, and ran across a medical work that advocated sweat baths. She was so taken up with it the doctor

made her a present of the book. I was sick when she came home, and, of course, was the first "victim;" and, "oh, my!" how quick I got well!

The improvised arrangements were a solid-bottom chair with quilt or blanket folded to sit on and hang down to the floor in front; then two or three blankets folded around the patient from back to front and front to back, reaching to the floor, then have a tin cup a third full of alcohol (wood alcohol is just as good); light it and set it under the chair. When perspiration starts, tie a wet cloth around the head and give the patient plenty of water to drink. Don't keep the patient in longer than twenty minutes; then wash off under the blankets and cool off gradually. If taken at night, going to bed immediately, there is no danger of taking cold, and it's equal to a Turkish bath. My! how the epidermis does roll off, even if taken every week!

After the bath cabinet came out I went to see them and took the measurement with my eye, and made one which cost \$3.00 (they wanted \$10.00 for theirs), and mine had much better oil-cloth. The cabinet is much the best, as it allows the patient to do his or her own washing.

We raised a family of four boys, and none of the family ever had the grip, although our neighbors had three different runs of it. If any one were feeling badly he took an enema, as large as possible, to flush out the colon; took a sweat bath, and went to bed. The next morning he would get up feeling fine.

Right here is another thing. Flushing the colon I found to be one of the greatest benefits to any one threatened with a fever. It works wonders—will cure almost all cases of indigestion, and that scourge among babies (summer complaint) it will cure almost immediately.

The above way of taking a sweat bath would have some advantages over your Michigan way by not having to work to get up the perspiration, and it can be taken in winter as well as in summer; but in winter one wants to be very careful and wash off in cool water at the last to close the pores, and not go out for one or two hours after cooling off. Down here we have to do very little work to get up the perspiration and the last two months all I have had to do was to go out to feed and water the chickens in the middle of the day, and I am ready for the bath.

I was born in Ohio, and lived there for fifty years, so I know all about your Ohio winters.

I want to tell you about my bees. I took them on as a side line three years ago, and increased up to seven hives. I had an accident in January, and had my right arm broken; so when bee time came I was no good at lifting or any thing else; but the better half took pity on me and donned a hat and veil and marched into the yard and helped through the season. Now we have 21 fine stands of bees, and have taken a thousand pounds of as fine honey as your best white clover. How's that?

J. H. CALKINS.

San Antonio, Texas, Aug. 28.

Temperance.

THE POISON OF THE BEE-STING AND THAT OF THE DRAMSHOP—ARE THEY TO BE COMPARED?

Mr. Root:—I read in GLEANINGS for Sept. 15, p. 1218, "May God hasten the day when they be swept from every State of the Union; and, better still, from off the face of the earth." I personally thank you for your expression. Now, Mr. Root, if one of your bees would sting one of your neighbors, and he should die from the sting, should therefore every bee-keeper be wiped off the face of the earth? Don't you know that life is just as sweet to the Pennsylvania hotel-keepers as it is to the Ohio manufacturer? Give me your explanation on this point, and we go still further. Are you, or do you pretend to be, a good Christian? If so, do you not know that Jesus Christ came into the world to save every soul? He did not come to wipe them off the face of the earth. Who are you, anyhow? We people around my home have churches, the Bible and the law of Pennsylvania. If one man abuses another he has to suffer the penalty of the law; but we are not going to wipe every thing off the earth. If you are prosperous in your business, thank God that he has done you so much favor, and pray that he may do so in the future; and so everybody else should be thankful for all he possesses, for every thing we have is the

gift of God. If he withdraws his hand we shall soon all be "wiped off the earth." JOSEPH SCHATZLE.
Trachsville, Pa., Sept. 23, 1907.

Well, my good friend, you have got me in a corner, have you not? To begin with, I think I can say as you do, and "personally thank you" for your illustration; and I thank you, too, for your very kind and Christianlike letter. I do realize that hotel-keepers who have been furnishing beer to their patrons are a different class of people from those who ordinarily run saloons. Yes, it is true a few people have died from the effects of stings, although such cases are very rare; but, my dear friend, have you not failed to consider that he who dies from a bee-sting dies an honest death? He is in no way to blame, and no slur rests on his reputation as it does on that of one who fills a drunkard's grave. If the injury from bee-stings were responsible for nine-tenths of the crime, or something like it, committed in this land of ours, do you think I would continue to be a bee keeper or to publish a bee-journal? If you have been reading GLEANINGS and other periodicals you certainly must know that the world is beginning to wake up to the fact that our jails and penitentiaries are almost all kept up because of the drink-traffic*. Yes, indeed, Jesus Christ did come into this world to save every soul, as you put it, and not to wipe them off the face of the earth; and, my dear brother, in my expression to which you allude I never thought of such a thing as wiping the saloon-keeper *himself* off the face of the earth. God forbid! I would wipe out the saloon and the saloon business that he might be compelled to earn his money in some livelihood that is not a damage to his fellow-men. You say we have the laws; but you do not seem to know that, at the conventions of saloon people, their public speakers have repeatedly declared they could not make a living if they were obliged to obey the law. It is because the saloon business demands that the law shall be trampled under foot, not only on Sunday but every other day and night, that our nation is waging such war against it. I can give a most hearty amen to all your closing words; and if it should ever be my good fortune to go to your part of Pennsylvania I shall most assuredly try to put up at your hotel; but unless I go pretty soon, dear friend, I do not believe I shall find a bar attached to it. May God help you out of the darkness, and into the light that is breaking, not only throughout our land but over the whole wide world, along different lines in the way of banishing intemperance.

*Lately there has been a tremendous excitement several times in our region in regard to mad dogs biting people right and left. In one case several schoolchildren were bitten, and death has resulted in some cases. Now, these children died an honest and innocent death. It was death of the body and not death of the soul; and yet we have been severely censured by the liquor-dealers because we have sometimes claimed that a saloon with its attendant gambling-dens and other things was like letting a mad dog go loose where children were near and likely to be bitten.

WANTED.—To buy for cash, comb and extracted honey, also beeswax. **ROBT. A. HOLEKAMP & SON,** 4263 Virginia Av., St. Louis, Mo.

WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston
M. V. FACEY, Preston, Fillmore Co., Minn.

WANTED.—Fancy clover honey, both comb and extracted. Send average sample of extracted honey, and give lowest price.
J. E. CRANE & SON, Middlebury, Vt.

WANTED.—I will pay 9 cts. per lb. for well-ripened white-clover honey in 60-lb. cans f.o.b. here; or will sell sweet-clover honey of like quality at the same price.
B. WALKER, Clyde, Ill.

WANTED.—Comb and extracted honey, car lots or less; paying 8½ cts. F. O. B. Milwaukee for extracted clover or basswood. Cash on arrival.
E. R. PAHL & CO., Broadway, Milwaukee, Wis.

WANTED.—No. 1 and fancy comb honey; 4x5x1½ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price.
C. M. CHURCH, Arnold, Pa.

Bee-keepers' Directory.

QUEENS.—Clover stock. Experience and methods count. Write me. **H. G. LARUE,** LaRue, Ohio.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey.
Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat.
ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and leather, 60c each; worth \$1.00. **G. W. BARNES,** Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. **ARTHUR RATTRAY,** Almont, Mich.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. **A. W. YATES,** 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies.
E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. **W. T. CRAWFORD,** Hineston, La.

ITALIAN BEES and queens—red-clover and golden strains. **E. A. SIMMONS,** Greenville, Ala.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. **B. F. YANCEY & SON,** Angleton, Tex.

FINEST Golden and red-clover queens, Caucasian and Carniolan. **DANIEL WURTH & GRANT,** Pitkin, Ark.

ITALIAN and CAUCASIAN bees and queens of best quality; price list free. **A. E. TITOFF,** Ioamosa, Cal.

FOR SALE.—Golden and red-clover Italian queens.
WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

GOLDEN yellow Italian queens—my specialty. Price list free. **E. E. LAWRENCE,** Doniphan, Mo.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. **ALISO APIARY,** El Toro, Cal.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted.
W. E. TRIBBETT, Staunton, Va.

QUEENS.—Improved Red-clover Italians bred for business; June 1 to Nov. 15, untested queens, 60c; tested, \$1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

IMPROVED ITALIAN QUEENS now ready; nuclei and colonies about May 10, Danzenbaker or L. frames; 20 years a queen-breeder; 500 colonies to draw from. Circular and testimonials free.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; an extra select breeder for \$2.50. I have had 12 years' experience at queen-breeding. Address
SAMUEL M. ANGEL, Route 1, Evansville, Ind.

Convention Notices.

The Tennessee State Fair held last week at Nashville was a decided success in every respect, and was universally pronounced the greatest fair ever held in the South.

In the apiarian department there were some fine displays of comb and extracted honey, wax, bees, implements, etc. Mr. Leslie Martin gave a dally live-bee demonstration in a wire cage, and this feature attracted a great deal of attention, as it was something new here.

The following awards were made:

Best 10 lbs. extracted honey, 1st, J. M. Davis, Spring Hill; 2d, J. M. Buchanan, Franklin; 3d, Chip Henderson, Murfreesboro.

Display of extracted honey, J. M. Davis.

Best case of comb honey, 1st, J. M. Buchanan; 2d, E. B. Buchanan, Franklin; 3d, Ira Moore, Nashville. Display of comb honey, 1st, J. M. Buchanan.

Display of beeswax, 1st, J. M. Buchanan; 2d, Mrs. W. M. Joseph, Nashville.

Nucleus of dark Italian bees, 1st, J. M. Davis; 2d, J. M. Buchanan; 3d, Leslie Martin, Lebanon.

Nucleus of golden Italians, 1st, J. M. Davis; 2d, Mrs. W. M. Joseph.

Nucleus of Caucasians, 1st, Leslie Martin; 2d, J. M. Davis; 3d, J. M. Buchanan.

Nucleus of Carniolans, 1st, J. M. Davis.

Best display of bees, bee-products, implements, etc., 1st, J. M. Davis; 2d, J. M. Buchanan; 2d, Mrs. W. M. Joseph.

J. M. BUCHANAN,
Supt. Apiarian Dept., Tenn. State Fair.

Mr. Fred W. Muth, Cincinnati, Judge.

The following is the program of the 29th annual convention of the Colorado State Bee-keepers' Association. to be held Nov. 19-21, in the Chamber of Commerce Building, Denver:

First session, Nov. 19, 10 A.M.—Opening prayer by Rev. Dr. Coyle; President's address, W. P. Collins; Secretary's report, S. Francis; Production of Extracted Honey, by Oliver Foster; discussion.

Afternoon session, 1:30.—Practical demonstration of making and grating queen-cell cups by John Lewis; discussion; practical demonstration of artificial swarming with live bees inside of a wire cage, by M. A. Gill; discussion.

Morning session, Nov. 20, 9:30.—Practical demonstration of treating foul brood, and prevention of swarming with the chute system, by H. Rauchfuss; discussion; The Production of Comb Honey, by L. A. Stuelant; discussion.

Afternoon session.—The Colorado Honey-producers' Association will render the following program: Address by President, W. L. Porter; Co-operation, R. C. Aikin; Grading of Comb Honey, Frank Rauchfuss; discussion and question-box.

Morning session, Nov. 21, 9:30.—Practical demonstration of grading comb honey by any who wish to enter the contest. This contest can be held the first or second day, by exchanging with some other number on the program; discussion; election of officers.

Afternoon session, 1:30.—Practical demonstration of wetting sections, cutting foundation, and fastening the same in sections, by W. L. Porter; discussion; question-box; adjournment.

A liberal premium list has been provided for the exhibition of bees, honey, and wax, held in connection with this meeting. There is a \$2.00 prize for photos of apiaries or things pertaining to apiculture. The officers of the association are: W. P. Collins, President; W. L. Porter, Vice-president; S. Francis, Secretary; Mrs. Rachel Rhodes, Treasurer; member of the Executive Committee, Oliver Foster.

The annual meeting of the Michigan Bee-keepers' Association will be held at Saginaw, the first session being Wednesday evening, Dec. 18, and continuing through Thursday and Friday, the last session being on the afternoon of the 20th. Further announcement as to program and headquarters will be made later.

Redford, Mich. ELMORE M. HUNT, Sec.

The 17th annual meeting of the Illinois State Bee-keepers' Association will be held at the State House, on Tuesday and Wednesday, Nov. 19 and 20, 1907.

Among those who will be present to help make our meeting a good one will be Dr. C. C. Miller, of Marengo; C. P. Dadant, of Hamilton; Geo. W. York, of the *American Bee Journal*, and N. A. Kluck, a delegate from the Northern Illinois and Southern Wisconsin Bee-keepers' Association. The regular railroad rates being but two cents per mile, they are the same as a fare and a third last year. Good beds can be procured in private families, if hotels are full, at 50 cts., and meals can be got at the restaurants from 15 cents up.

JAS. A. STONE, Sec



SHOP-WORN OBSERVATION HIVES.

We have a few varnished observation hives, both one-frame with super and ten-frame, which have been in sample-rooms, and are not as fresh and bright as new goods. We offer these, while they last, at 20 per cent discount from list price.

SUNDAY SCHOOL TIMES.

There is no weekly home paper for the moral and religious nourishment of the family that will equal the *Sunday School Times*. It is especially helpful to Sunday-school teachers and others interested in Bible study. We can supply it clubbed with GLEANINGS at \$1.75 for the two, the regular price of each being \$1.00.

ADVANCE IN PRICE OF BUSHEL BOXES.

Because of increased cost of lumber we are obliged to mark up the price on bushel crates and boxes. Until further notice the price of all-slatted bushel boxes, 14 to crate, is \$2.10 per crate; 12 to crate, \$1.90; galvanized bound, 12 to crate, \$2.50. A corresponding advance is made in wholesale and jobbing prices.

YELLOW-SWEET-CLOVER SEED.

We have sold the last of our stock of yellow-sweet-clover seed; and until we secure a further supply we can not fill any more orders. As we go to press we have got track of a nice lot in Oregon, which we hope to secure. If we do we will so announce, with price, in a later issue.

WHITE-SWEET-CLOVER SEED.

We have secured a pretty good stock of unhulled white-sweet-clover seed. We find in several instances a large local demand for the seed at better prices than we have been selling at, and that, in order to make it an object for those able to gather the seed to do so, we shall have to pay better prices than we have been doing in former years. Our stock of seed secured for the coming season is little more than half what we had a year ago. We are obliged, therefore, to raise our selling prices to 25 cts. per lb., postpaid; 15 cts. where shipped with other goods; \$1.30 for 10 lbs.; \$11.00 per 100 lbs.; hulled seed at 8 cts. per lb. extra.

The attention of our Texas readers is directed to the advertisement of Udo & Max Toepperwein, which is found on page 1459. Mr. Udo Toepperwein is favorably known to bee-keepers generally and to the trade in Texas in particular, and has recently associated

with him his brother, on account of his increasing business, and they will devote themselves especially to this line from this date on.

This firm is very favorably located for the distribution of supplies throughout Texas. San Antonio has most excellent shipping facilities; and their warehouse being located directly on the siding of the S. A. & A. P., and close by the other depots, makes it possible for them to serve bee-keepers promptly and satisfactorily. The aim of this concern is to confine their efforts to Texas, and to render the most efficient service possible to bee-keepers in that State.

DR. MILLER SPLINTS.

We have often had calls for wood splints for use with foundation in brood-frames to prevent sagging, as used and recommended by Dr. C. C. Miller. We have usually made them by sawing them out, and wasted more than three-fourths of the wood in sawdust. We have hit upon a plan of slicing them, thereby saving all the wood, and cheapening the process as well. We can furnish them 8½ inches long for L. frames at 50 cts. per 1000 by mail; 40 cts. shipped with other goods. Small lots at 10 cts. per 1000 postpaid. Other lengths can be furnished as well. If shorter, same price in 1000 lots. If longer, add fifty per cent up to 12 inches long.

SIMPLEX AND NO. 25 JARS AT LAST.

We have received from the factory the carload of jars which were to have been shipped last August. We are now in shape to supply promptly No. 25 jars holding 1 lb. of honey, 2 dozen to the case, at \$1.10; 6 cases, \$6.30; 20 cases or more at \$1.00 a case.

Simplex jars holding 18 oz. of honey, 2 dozen to the case, at \$1.15 per case; 6 cases, \$6.60; 20 cases or more at \$1.15 per case. This simplex jar is over-size for one pound of honey, but are the best we can do in this style. There seems to be a great difficulty in producing this style of jar with a glass cap which screws on, especially the cap with internal spiral thread. There is a small stock of the 1-lb. size in our Philadelphia branch; but aside from these the 18-oz. size is the only one we can furnish.

REMITTANCES FOR ORDERS AND ACCOUNT.

We are under the necessity of asking our friends and patrons when making remittances not to send checks on local banks, but to send, instead, either a bank draft on some large city bank, preferably New York or Chicago, or a postoffice or express money order. The tight money market through which numerous sections are passing is making it difficult for us to get credit at the banks for local checks, and in some cases we may be obliged to return them and ask instead for a remittance in one of the forms mentioned above. Where we make payments we almost invariably do so by New York draft. Where you can not remit by any of the methods mentioned, then send money by registered mail. The most approved methods, however, are by bank draft, postoffice or express money order.

ALFALFA HONEY, COMB AND EXTRACTED.

We have received in the last two weeks a car each of comb and extracted alfalfa honey. The extracted comes from Utah, and the comb from western Colorado. We are selling the extracted in 60-lb. cans at 10 cts. in single-can lots; 9½ cts. by the case of two cans; five cases or more at 9 cts. per lb.

The comb honey, 24 sections to the case, sells at \$4.00 per case; per crate of 8 cases or more, \$3.80 per case; 25 cases or over, write for prices. No. 2 honey at 30 cts. per case less. We also have some New York and Pennsylvania white comb honey at 18 to 20 cts. per lb., according to quality or grades. We are in the market to buy clover extracted honey. If any of our readers have any to offer, mail sample and write us, stating how much you have, how packed, and what you ask for it.

CARTAGE CHARGE ON ORDERS FILLED BY OUR CITY BRANCH OFFICES.

The expense of doing business in our large cities is so great that we can not continue furnishing goods at regular prices free on board cars from our city branch offices. It is a great accommodation to many custom-

ers, especially in the busy season, to be able to secure goods promptly and at lower freight rates from these distributing centers, and I am sure they will be willing to share with us the heavy expenses necessary to make this accommodation possible. Hereafter on all orders from Chicago, New York, Philadelphia, and Washington offices, shipped by freight, a cartage charge of 25 cts. will be made on orders of \$3.00 or less; 35 cts. on orders of \$3.00 to \$5.00; 50 cts. on orders of \$5.00 to \$10.00; over \$10.00 in value, 5 per cent of the bill, or 20 cts. per 100 lbs., if that figures less than the 5-per-cent plan. At New York city the minimum charge will be 50 cts.

These charges do not cover the cost to us, but represent a fair division of the cost.

CHANGES IN PRICES FOR 1907-8.

Up to this time we have determined on the following changes in list prices. During the past season we have worked off our surplus stock of No. 2 plain sections so that from this date forward, until further notice, the price on B grade or No. 2 plain sections will be 25 cents per 1000 higher than the rate given in our catalog.

We cut out the dozen rate on No. 30 wire on spools, and increase the 5-lb. coils to \$1.00 each.

B. P. S. paint for hives is advanced to \$1.75 per gallon; 90 cts. per ½ gallon; 50 cts. a quart; 30 cts. a pint.

Painted wire cloth is advanced to 2½ cts. per foot for cut pieces; 2 cts. in full-roll lots. Galvanized wire cloth, 8 mesh, is advanced to 8 cts. per sq. ft.

There has been an advance of over 30 per cent in material for bee-veils, and new prices are adopted as follows: No. 1, all silk tulle veil, 90 cts.; No. 2, cotton tulle with silk face, 60 cts.; No. 3, all cotton tulle, 50 cts.; No. 4, mosquito-bar veil, 30 cts.; bee-hat, 30 cts.; silk tulle per yd., 60 cts.; cotton tulle per yd., 25 cts.; mosquito-bar, per piece of 8 yds., 75 cts. No change in globe veil.

THE NEW EDITION OF THE A B C OF BEE CULTURE NOW READY FOR DISTRIBUTION.

The new edition of the A B C of Bee Culture has finally, after a great deal of labor, been completed. So far from being merely a work for beginners, or the A B C, it is also an X Y Z of the business, and hence equally valuable to the veterans, for it gives all the latest processes and methods of the most advanced bee-keepers, as well as those that may be used by the novice.

It very often occurs that an experienced beekeeper has, within a year or so back, read such and such a method for producing comb honey or some one else's plan for the prevention of swarming. He has not kept a file of the journals. He can not remember in what issues those methods appear. On reading them at the time, he determined to give them a further test when the season opened up; but where, oh! where, can he find those journals containing just the articles that describe these methods? Well, the new work has given in brief some of the most important; and all he has to do is to turn to the index and find what he wants balled down in clear language.

Then, again, it often happens that the bee-keeper hears about the Heddon method of transferring, or reads something about Alexander's method of strengthening weak colonies in the spring. Again, he sees something about the Doolittle or the J. E. Hand scheme for producing comb honey in connection with the divisible-brood-chamber hive. He is all at sea; but the new volume will tell him all about these and more.

But in a scientific way the A B C and X Y Z is far ahead of what it has ever been before. The botanical list of honey-plants has been almost entirely re-written by W. K. Morrison; the chemistry of honey, of glucose, and of nectar are all covered by the same writer.

Mechanically the new edition has been improved by the use of an almost entirely new set of engravings, the old ones being reengraved, and the use of enamelled book paper, the most expensive paper of the kind procurable. This brings out not only the letter-press but the engravings as well to a point of brilliancy and clearness that is pleasing.

But it would take quite a little volume to tell about the new features of this magnificent work, and the reader will have to see it in order to appreciate its merits. While it is nearly 100 pages larger, and all told 300 pages of new matter, the price has been increased only slightly — from \$1.20 by mail to \$1.50, or

\$1.25 if sent with other goods. Or in half morocco, \$2.00, postpaid, or \$1.75 with other goods. Full leather, \$2.50, postpaid, or \$2.25 with other goods.

EARLY-ORDER CASH DISCOUNT.

We have been obliged to cut down the early-order cash discount below that offered in former years; but it is still sufficiently liberal to pay transportation charges quite a distance, or to pay liberal interest on the money invested in supplies early, and should attract those forehanded people who know pretty well what they want for the coming season.

The following is the schedule of discounts for early cash orders for bee-keepers' supplies, subject to the conditions below:

| | |
|-----------------------------------|--------------|
| For cash sent in November, deduct | 4½ per cent. |
| " " " December, " | 4 " " |
| " " " January, " | 3½ " " |
| " " " February, " | 3 " " |
| " " " March, " | 2½ " " |
| " " " April, " | 2 " " |

The discount is only for cash sent before the expiration of the months named, and is intended to apply to hives, sections, frames, foundation, extractors, smokers, shipping-cases, cartons, and other miscellaneous bee-keepers' supplies. It will not apply on the following articles exclusively; but where these form no more than about one-tenth of the whole order the early-order discount may be taken from the entire bill: Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee-books and papers, labels, and other printed matter, bushel boxes, seeds, and other specialties not listed in our general catalog.

Special Notices by A. I. Root.

OFF FOR FLORIDA.

Please take notice that all communications after this date, for A. I. Root, and for him only (without any reference to our manufacturing and publishing departments here at Medina), should be addressed to A. I. Root, Bradentown, Manatee Co., Florida. In my Florida home I shall be glad to hear from you in regard to the Health Notes, the progress that temperance is making in your locality, high-pressure gardening, etc., providing you do not expect me to take very much time in answering, and particularly if you inclose in your letter an add essd postal card for your reply. As I grow older I find it a very great task and strain on my nerves to address a communication. I can write what I want to say to the writer very easily, compared with the amount of labor required to hunt up the name and address, decipher bad writing, and be sure that I get it right. I do not care for the postage; but I do find it a great relief to find an addressed envelope or postal card when I am expected to reply to something. I prefer the postal card, because I can usually get on a card about as much as I have time to say. I expect to be very busy in my Florida home, but I shall always have time to lend a helping hand, providing, as I said above, a postal card will contain all I am expected to say or do.

KIND WORDS.

HOW GLEANINGS SAVED \$5.00.

I am very much pleased with GLEANINGS, and, while not a large ap arist, I have received much good from a perusal of its pages. I am very fond of reading Mr. Root's sermons, and his exposure of certain methods of fleecing the unwary. I was tempted to send for the formula of the ten-cents-a-bushel feed, but did not after reading GLEANINGS.

FRANK E. TOWNSEND.

Ashton, Iowa, Sept. 23.

Tell grandpa A. I. Root to keep up the Home papers this winter. Go after the frauds and humbugs and saloon people. He has the backing of the whole GLEANINGS family.

SIMEON G. KILGORE.

London, Ohio, Sept. 24.

ABC ^{AND} XYZ

of

Bee Culture

By A. I. and E. R. ROOT

New 1907 Edition

NOW ON SALE.

LARGER and BETTER

115,000 Copies have been
Printed

A BEE-KEEPERS'
ENCYCLOPEDIA

All the New Ideas

Hundreds of Illustrations to make
every thing plain and practical

Nearly 600 Large Pages

PRICES

| | |
|--------------------------------------|--------|
| Cloth-bound | \$1.50 |
| Half Leather | 2.00 |
| Full Leather | 2.50 |
| Postpaid to any Country in the World | |

THE A. I. ROOT CO.
MEDINA, :: :: OHIO

Only two years have elapsed since we brought out an edition of 15,000 copies of the well-known A B C of Bee Culture. This brought up the number to 100,000 copies, thereby surpassing in popularity all other bee-books ever printed.

The demand for these has been so great that we were compelled to undertake a new edition at once, and in doing so we took the opportunity to revise and greatly enlarge it again, though it had been generally considered quite a large book.

In doing so we brought in new blood to assist us, give new ideas, and otherwise enable us to produce as good a book as it is possible to make at a popular price. If you will carefully examine a copy you will be prepared to admit the new volume is quite an improvement on its predecessors. To keep pace with improvements it contains nearly 100 double-column pages more than the previous edition.

The new methods of queen-rearing have been carefully reviewed, and the main points incorporated in the new edition, so that the practical bee-keeper who possesses a copy will have the best ideas of the subject constantly by his side for reference.

The new methods of wax-production are treated in an exhaustive fashion; and as this subject is now of more importance than formerly, more space has been devoted to it.

The new power-driven automatic extractors are amply illustrated and described. The subject of diseases has received entirely new treatment to keep pace with the new discoveries of the last few years. The laws relating to bees have for the first time received full treatment. No other bee-book treats of this very important subject. Honey, sugar, nectar, and glucose are carefully defined in accordance with the demands of our new pure-food laws.

In accordance with the ideas of its first author, A. I. Root, the new A B C and X Y Z is *eminently practical*.

German edition (new), paper covers, \$1.75; cloth-bound, \$2.00. Postpaid anywhere. This is the famous A B C in the language of the Fatherland, to suit our many German friends.

French edition (new), cloth-bound, \$2.00, postpaid. This is another edition, translated into the beautiful language of France.